"This is Paradise":

Community sustainability indicators for the Western Newfoundland Model Forest

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Information Report M-X-216E

Socio-Economic Research Network
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Abstract

This report monitors community sustainability in the Western Newfoundland Model Forest. Specific focus is placed on the communities of Corner Brook, Pasadena, Lark Harbour, and Rocky Harbour as these are representative of the region's community types. Two different social indicator approaches are used: objective measures in the form of Canadian census data, and subjective measures from personal interviews with community residents. The objective measures suggest that socio-economic conditions are difficult in western Newfoundland in comparison with the rest of nation. Rates of unemployment are high, incomes are low, and many families live below the poverty line. The subjective assessment presents a contrasting picture to the objective indicators. Many people are committed to the region and seek ways to supplement incomes and make a living from a variety of sources. Although there has been some population loss in outlying communities in recent decades, many are apparently willing to trade off income and income-earning potential for other aspects of quality of life they feel are unique to the region. Newfoundlanders in this study area appear strongly attached to place and this attachment will factor significantly in the future sustainability of the region and the communities that comprise it.

Resumé

Le présent rapport porte sur la durabilité des collectivités situées dans la Forêt modèle de l'Ouest de Terre-Neuve. Nous examinons en particulier les collectivités de Corner Brook, de Pasadena, de Lark Harbour et de Rocky Harbour, car elles sont représentatives des types de collectivité qu'on trouve dans la région. Nous avons retenu deux démarches différentes relativement aux indicateurs sociaux : des mesures objectives, en l'occurrence des données du recensement du Canada, et des mesures subjectives, obtenues au moyen d'entrevues avec des résidants des collectivités. Les mesures objectives donnent à penser que les conditions socio-économiques sont difficiles dans l'Ouest de Terre-Neuve, si l'on compare au reste du pays. Le taux de chômage y est élevé, les revenus sont faibles et de nombreuses familles vivent en deçà du seuil de pauvreté. L'évaluation subjective brosse un tableau différent de celui des indicateurs objectifs. Bon nombre de gens tiennent à vivre dans la région et cherchent à arrondir leurs revenus et à gagner leur vie par divers moyens. Il y a bien eu une diminution de la population dans les collectivités périphériques au cours des dernières décennies, mais bon nombre de personnes sont de toute évidence disposées à faire des compromis sur le revenu et le potentiel de gain en faveur d'autres aspects de la qualité de vie qu'elles estiment uniques à la région. Les Terre-Neuviens de la présente étude semblent fortement attachés à l'endroit où ils vivent et cet attachement aura une influence considérable sur la viabilité future de la région et des collectivités qui la composent.

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Introduction

As populations increase and natural resources decrease, society is becoming more concerned with sustainable development. Academics, governments, and local communities are searching for ways to maintain the vitality of rural communities in the face of daunting ecological, economic, and social challenges. In order to determine whether sustainability is being achieved, we need some way of measuring progress toward this goal. Social indicators can be used to monitor sustainability by measuring objective attributes of communities over time, such as employment rate, income distribution, and real-estate values. Indicators can also be used to measure more subjective qualities such as community satisfaction and attachment to place. Often, each of these types of indicators portray very different assessments of rural community life.

This report examines both subjective and objective social indicators of community sustainability in the Western Newfoundland Model Forest (WNMF). Newfoundland provides a particularly relevant case, as the province has witnessed dramatic ecological and social changes following the collapse of the northern cod fishery. The effects of this event are not confined to the recent decline in the province's marine resources but rather reflect a trend of resource dependency and exploitation (Norcliffe 1999). During 1950s and 1960s, the government instituted a program to relocate Newfoundlanders from unsustainable communities to larger centers because the cost of servicing these communities was too high and few people were able to find employment (Iverson and Matthews 1979). To this day, rural communities in the province endure high unemployment, low incomes, and significant out-migration as a result of their dependence on a declining resource base. The exodus of Newfoundlanders and the passing of a rural way of life has captured national attention (Little 2000). Despite these seemingly bleak objective conditions, many Newfoundlanders remain committed to their communities and want to see them flourish in the future. For this reason, both types of indicators will be used to paint a more accurate picture of the sustainability issue in Newfoundland.

The WNMF initiated this study as part of its effort to monitor the sustainability of the region (Western Newfoundland Model Forest 1999). The Model Forest is a member of the Canadian Model Forest Network, an agency that seeks to improve forest sustainability. Each Model Forest brings together representatives from local communities, government, industry, environmental organizations, academia, aboriginal communities, and other interested parties to research and discuss better ways to manage forests. One of the goals of the Model Forest Network is to establish local-level criteria and indicators of sustainable forest management. This report represents part of the effort made by the WNMF to understand more fully the critical issues within its communities and the impacts of the forest industry.

In this study, we use six key indicators to assess community sustainability in several Model Forest communities: population, employment, income, human capital, poverty, and real estate. We begin with a sustainability profile of four representative communities using objective measures in the form of Statistics Canada census data. These communities are Corner Brook, Pasadena, Lark Harbour, and Rocky Harbour. These profiles are followed with results from field work, during which we interviewed people in these communities to see if their subjective perceptions of these indicators matched the descriptive statistics. The results show that objective indicators often fail to reflect the complex social reality of a place.

Defining community

It is important to have a clear definition of what the term community means. Sociologists have long debated the definition of this word, but a common definition contains the following elements. A community is a place (*geographical element*), in which people with some degree of shared identity and norms (*values element*) interact within a common institutional framework (*organizational element*) (Flora *et al.* 1992). The values element tends to be the controversial part of such a definition. Qualitative data collected from this study suggest there is a fair degree of community identity and shared norms and values within this geographically defined place.

Communities of place are recognized as geographically defined units on the landscape. For example, Pasadena is a community of place that is defined by political boundaries and a set of physical structures. However, other types of communities are not bound in space, but are groups of people who join together because of a common interest. For example, the Atlantic Salmon Federation is a community of interest that unites people concerned with the conservation and wise management of the Atlantic salmon. Members of this community may seldom meet in the same location, but still share a common set of values.

In the past, most rural communities were thought to fit all the aspects of the definition of community outlined above. They were geographic locations, with a set of social institutions where people shared common values and supported each other. However, ready access to transportation and communications has broken down geographical barriers and weakened ties within communities (Flora *et al*. 1992). People move freely about and between communities and may share more in common with people thousands of miles away than with their fellow community members. It cannot be assumed that all those living in one community, such as Pasadena, will share the same values. For this reason, in this report, we use the term "community" to refer to communities of place.

Social Indicators of Community Sustainability

Sustainability is an elusive concept because different authors and researchers have conflicting opinions on what it means.The idea of sustainable development captured international attention with the release of the Brundtland Commission report (World Commission on Environment and Development 1987). This report asserts that sustainable development requires the needs of present generations to be met without compromising the needs of future generations. Sustainability requires more than just having enough resources for future generations to consume. It also requires that economies and social systems be maintained and allowed to flourish.

Policy makers and managers in Canada's forest industry have come to realize the importance of monitoring progress toward sustainability. The Canadian Council of Forest Ministers (1997) outlines six criteria of sustainable forest management, each with several elements: conserving biological diversity, ecosystem condition and productivity, conserving soil and water resources, global ecological cycles, multiple benefits, and society's responsibility. These criteria provide a common framework for understanding and highlighting trends in sustainable forest management. The Council states that one of the elements of society's responsibility is the sustainability of forest-dependent communities. Residents of these communities draw their livelihood from the forest and are concerned about the future viability of their communities. The Western Newfoundland Model Forest (1999) also recognizes the importance of the sustainability of forest communities and the values people draw from the forest.

It is impossible to know if we are advancing toward a more sustainable society without employing some measure of progress. One way to measure sustainability is through a social indicators approach. Social indicators are statistics collected over time that can be used in policy and management decisions (Force and Machlis 1997). They are used to illustrate the changing social conditions of a community to see if it is improving or declining. There is an endless variety of ways to monitor sustainability through an indicators approach. A thorough review can be found in Beckley and Burkosky (1999) where 22 different approaches are compared.

There are many benefits to implementing a social indicators approach. Indicators are primarily useful for informing policy makers, resource managers, and the general public.The North Central Regional Center for Rural Development (1999) prepared a workbook to help communities develop plans for monitoring sustainability. The goals were to increase the skills and knowledge of local people, strengthen relationships, improve communication, and promote sustainable, healthy ecosystems and diverse economies. Force and Machlis (1997) point out several advantages of indicators.

1. Comparisons between regions, which can help in deciding where certain management actions are appropriate.
2. Identification of unique conditions within one region.
3. Comparison of changes over time using historic data.
4. Early identification of potential problems, such as regions at risk of increased unemployment.
5. Evaluation of responses to management decisions, such as the closure of a fishery.

Objective and subjective indicators

One of the first decisions in selecting indicators is choosing between subjective and objective measures. Objective measures are derived from data sets, such as the Census of Canada, that record social structural variables. Subjective measures are formed from a community self-assessment such as a survey or key-informant reporting (Beckley and Burkosky 1999). It is generally easier to monitor objective indicators because the data are often easily gathered. For example, we developed sustainability profiles of each community in this study using Statistics Canada census data. We were able to characterize conditions in each community using variables such as unemployment, poverty, education, and migration. These measures are very useful for describing structural conditions that are important measures of a community's viability.

Objective measures, however, may not be able to capture the complexity of meanings and experiences of community residents. As Diener and Suh (1997, p.199) state:

> *"Probably the largest limitation of social indicators stems from the fact that objective indicators may not accurately reflect people's experience of well-being. Individuals' sense of well-being is an experience that is far more complex and multiply determined than assumed by descriptive social indicators based on external circumstances in a society."*

Subjective measures may offer more insight than objective measures into issues of overall community well-being and sustainability. Talking to people about their communities provides an insider's view of what residents feel is important

to the vitality of their communities. Nationally generated statistics may fail to uncover things such as social divisions and inequalities in a community, the importance of certain activities on the landscape, and the sense of community that keeps residents rooted in place (Kusel 1995). One example of a subjective indicator that holds great potential as a social indicator is sense of place (Stedman 1999). This concept emphasizes people's own meanings, attachments, and satisfaction levels for their communities. Whichever indicator is chosen, it must have meaning to local people and should involve them in the measurement process to reflect the true social reality of that place (Besleme *et al.* 1999).

Selecting indicators for this study

Cobb and Rixford (1998) provide detailed analysis of lessons learned in social indicators research and suggest many ways to effectively select and use indicators. We applied some of these suggestions in the following ways.

- *Having a number does not necessarily mean it is a good indicator.* In this study, we recognize that statistical analysis may not capture all the sustainability issues in a community effectively, so we also use personal experience of community residents to enhance our measures.

- *Effective indicators require a clear conceptual basis.* We selected six indicators that are commonly used in the literature: population, employment, income, human capital, poverty, and real estate (Beckley and Burkosky 1999). Each of these indicators are easily understood and measure things that affect people in their daily lives. A detailed description of each is provided below.

- *Comprehensiveness may be the enemy of effectiveness.* Too many indicators can confuse people and distract from the bigger picture. The list here is kept short to focus on some of the most relevant issues in sustainable communities.

- *Don't confuse indicators with reality.* Indicators are only snapshots of life in a community and should not be taken as reality. We use multiple measures for each indicator to show a more comprehensive and balanced perspective.

- *Address problems people care about.* Many people are concerned with sustainability and this work can be useful to local industry, Model Forest partners, politicians, and communities.

The six indicators selected in this study have also been used in previous efforts by the Canadian Forest Service to monitor community sustainability in the Model Forest Network (Socio-Economic Research Network 2000, Parkins and Beckley 2001). When measured with both quantitative and qualitative methods, they have proven to be effective in describing community sustainability. Below is a description of each indicator and the relevant measures. For a more complete description of each, see Parkins and Beckley (2001).

Population

People are often attracted to resource-dependent communities by the promise of good jobs. This may lead to a transient community where workers pass through for seasonal or short-term employment and do not contribute to a sense of community. These people may become unemployed and contribute to raised poverty levels in the community if the resource industry is downsized or fails completely. This may be equally true for long-term residents, who may be forced to migrate from the community if they cannot find steady employment in the region. Also, it is beneficial to have a balanced age distribution in the community that reflects provincial and national levels. For example, retirees provide a valuable source of income for communities but they can also be a drain on community resources. Young people represent the potential of a place, but only if they stay in the community and contribute to its well-being. We use measures of population change, migration, and age distribution to help assess sustainability in these communities.

Employment

Employment measures are likely the most often-used indicators of sustainability because of their importance to community well-being. Quite simply, if people cannot find work in a place, they will be forced to leave unless they receive employment insurance or welfare payments, or live on investment income. In resource communities, this can be especially problematic as these industries can experience sudden changes due to global market forces. In single-industry towns, it can be particularly devastating if markets for the product disappear or become unavailable due to cost restrictions. Therefore, an economically diverse community with employment balanced in several sectors will likely be more sustainable. It is also important to examine whether men and women have equal access to the job market. In resource-dependent communities, women are often relegated to low-paying positions in service and administrative professions and are excluded from the higher paying resource jobs. Healthy communities

should exhibit high levels of employment and labor-force participation, equal for both sexes, in a diverse array of sectors.

Income

Communities that exhibit positive employment conditions will often show high household incomes. It is important that people are able to draw incomes sufficient to permit living a quality life in the region in which they reside. It is also important to consider income distribution and who makes the money in a community. Do both men and women draw comparable incomes? Are people in one employment sector making far better incomes? Are all sub-populations able to find work that pays adequately? The answer to these questions is critical in determining challenges to sustainability for any community.

Human capital

In order for communities to survive and flourish, they must be able to adapt to change. Human capital measures the collective ability of a community to anticipate and respond to changes that may come from well outside the region. We use educational attainment as a measure of the human resources available in a community because it offers the simplest measurement opportunity at this time. Additional work is ongoing related to assessing community capacity though other measures. If citizens are better educated, they will have the ideas and tools to build sustainable communities. It must be remembered that human capital can involve more than just educational levels. There are other aspects of community capacity that cannot be captured through educational attainment measurements, such as community cohesion, willingness to work together, and knowledge of subsistence practices.

Poverty

Although many people may have adequate incomes to live comfortably in resource-dependent communities, there are usually some who live in relatively disadvantageous conditions. The ratio of these disadvantaged households and individuals to more prosperous ones is an indicator of overall well-being. There may be a sub-population who, for whatever reason, are unable to find employment in the well-paying sectors or whose transfer payments are insufficient to cover expenses. Sustainable communities should offer opportunity for all people and exhibit low rates of poverty. We use incidence of low income as a proxy measure for poverty.

Real estate

Real-estate values can be used as an indicator of stability within a community. Resource-dependent regions are prone to a boom-and-bust phenomenon with fluctuations in resource demand and prices. These fluctuations can be reflected in real-estate values as people move in and out of the community with employment trends. We consider dramatic changes or over- and under-pricing of housing values to be a sign of turbulence and unsustainability. The high rate of personal home construction may have some downward pressure on real-estate values in rural Newfoundland. Although real-estate values, as measured by Statistics Canada, reflect exchange values for dwellings, many rural Newfoundlanders are primarily concerned with use values for their homes. In this way, the value of a home may be an imperfect measure of its worth to the owner.

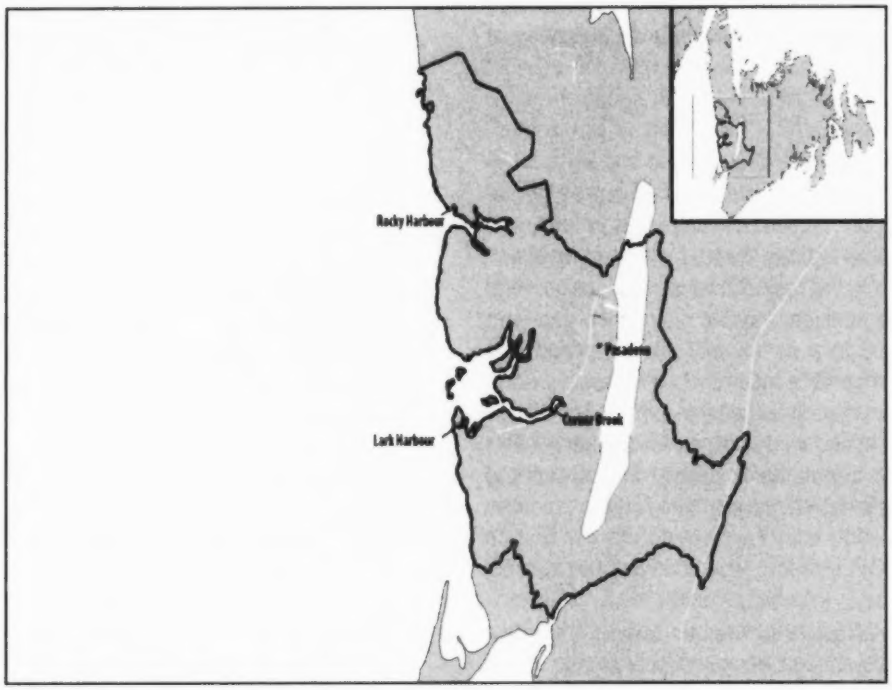

Figure 1. Western Newfoundland Model Forest

Methods

Study site

The Western Newfoundland Model Forest covers an area of 923 000 hectares of boreal forest (Figure 1). The area is managed for a number of different uses including a large protected area (Gros Morne National Park) and industrial uses such as forestry (Corner Brook Pulp and Paper). Corner Brook is the largest community in the Model Forest and serves as the regional center for business, education, and medical needs.The coastline is dotted with many communities that exist primarily as fishing ports.

Four communities were selected as representative of the Model Forest to permit a depth of coverage that would not be possible if every community were studied (see Table 1). The city of Corner Brook was selected because of its importance as a regional center and its high reliance on forestry. The pulp mill is one of the largest employers in town, along with the hospital. Pasadena is another major community in the WNMF that functions primarily as a bedroom community for Corner Brook.There is little commercial activity in this community, as most people commute to the city for employment. Lark Harbour has traditionally relied heavily on the fishery, although this has changed with the northern cod moratorium. Rocky Harbour is located in Gros Morne National Park and is the main visitor center and Parks Canada base.

Measuring objective indicators

Each indicator was measured using data from the Census of Canada, produced by Statistics Canada for the years 1986, 1991, and 1996. These three census periods are recorded on CD-ROM and provide convenient access to data. Years prior to 1986 are not recorded digitally nor are they as comprehensive as the three most recent census periods. These three censuses span a 10-year period to provide some idea of social trends in the local area.

Statistics Canada reports data for a number of units of land including a census subdivision (CSD). A CSD generally refers to a municipality or village, but can also mean an unorganized region made up of several small communities or a cottage area. Therefore, caution is needed when interpreting CSD data, as the data may refer to a greater population than just those people contained within a particular community. The four communities selected in this report are all neatly contained within the boundaries of a single CSD. A complete listing of all the populated CSDs in the WNMF can be in found in the Appendix.

Table 1. Population for selected regions, 1996

Census Division	Population
Pasadena	3,445
Corner Brook	21,893
Lark Harbour	681
Rocky Harbour	1,066
Western Newfoundland Model Forest	46,655
Newfoundland	551,792

Source: Statistics Canada 1996

For the purpose of this study, a custom data set was created to encompass the population contained within the Western Newfoundland Model Forest. A Model Forest is created based on ecological and management boundaries, and these do not necessarily correspond with political boundaries. The boundaries of some CSDs straddle Model Forest boundaries and summing values from these CSDs would yield inaccurate results. To solve this problem, a digital map of the WNMF was overlaid on Statistics Canada reference maps to determine which enumeration areas (EAs) composed the Model Forest. Enumeration areas are the smallest and most basic units of the census and are used as building blocks for larger geographies. Adding the values from the customized list of EAs that most closely approximate the WNMF boundaries yields the most accurate measure of the WNMF population possible.

Measuring subjective indicators

It is possible to measure subjective indicators using statistical procedures in much the same way as objective indicators. A survey instrument to measure items such as community cohesion, satisfaction, and sense of place could be designed. In this study, we choose to measure subjective conditions using qualitative methods. We carried out field work in the summer and autumn of 1999 to ask people living in each of the communities about their perceptions related to each indicator. Many of these comments are scattered throughout this text in italics. Previous indicator work demonstrates how using this type of narrative data can provide context for each indicator and bring in undisclosed social and economic perspectives (Parkins 1999).

Interviews were conducted with 30 key informants in both one-on-one and group settings. Eighteen of the key informants were from Corner Brook or Pasadena. The remaining 12 were from the smaller communities. The sample contained young people in their 20s up to seniors, members of service groups, elected officials, environmental organization representatives, and social service public servants.There were 19 men and 11 women in the sample. Although the sample was a key-informant sample, we were careful to construct it to represent the demographic diversity of region.

Each interview followed a semi-structured format. A series of common questions were asked of all respondents, with additional opportunity for each interviewee to elaborate on an area of particular interest to them. Respondents were selected using snowball sampling techniques (Patton 1990). Initial contacts were made in each community using service directories and local contacts and then each of these people were asked to name others who had insights into sustainability. Through this technique, a network of potential interviewees was established that represented the diversity of individuals living in the Model Forest. Respondents came from a variety of backgrounds, including local government, service groups, environmentalists, industry, and others. To protect those who graciously participated in the study, no names or identifying phrases are included with the quotes.

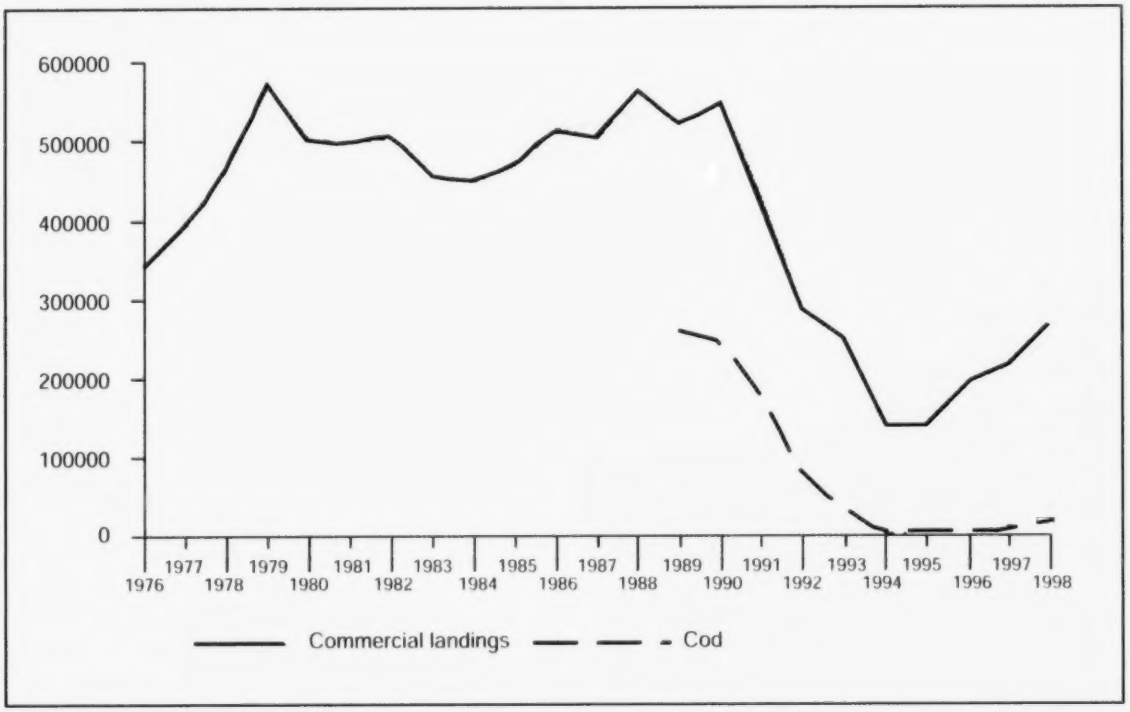

Figure 2. Commercial landings (metric tonnes) for Newfoundland 1976–1998

Resource Dependence in Newfoundland

Since it was first discovered by Europeans, Newfoundland has relied greatly on its abundant natural resources. The first colonizers of the island fished its waters for the rich cod stocks and logged the forests for firewood and home construction (Hamilton and Seyfrit 1994). Fishing has always been the backbone of the Newfoundland economy and way of life. Visitors to the province can still see this close relationship to nature in the hundreds of communities that cling to the coastline. However, many communities have disappeared because, at one time, they were deemed unsustainable. In 1953, the provincial government began a program of rewarding smaller communities to close down and relocate citizens to larger centers. An intensified program was instituted in 1965 which raised rewards for moving and put pressure on many communities to shut down (Iverson and Matthews 1979). The government was concerned about the amount of money it required to provide modern amenities such as roads, hospitals, and schools to some villages. The inshore fishery was also not providing adequate levels of employment and it was thought that larger centers would provide a more stable base. Some people experienced great hardship in these moves, as little consideration was given to subjective qualities of communities such as the simple pace of rural life and the close ties with family, friends, and places (Gard 1985, Iverson and Matthews 1979).

Fishing in the province did continue after the resettlement of many Newfoundland communities and continued to intensify. In recent years, however, the fishing resource has become severely depleted after years of overfishing and mismanagement of the cod stocks (Hutchings and Myers 1994). Figure 2 illustrates the dramatic reduction in saltwater landings since a moratorium on fishing was declared in 1992.[1] The recent growth in value of fish landings is due to crab and shrimp fisheries. Although the value of these fisheries has been fairly high, they have not provided nearly the employment than the cod fishery once did.

Newfoundlanders have also relied on forest resources to sustain their communities. At the turn of the 19th century, timber licences were distributed to encourage expansion and diversification of the province's economy (Gray 1981).

[1] There are numerous accounts of the demise and social consequences of the downturn in the fishery, including Harris (1998), Palmer and Sinclair (1997), Chantraine (1993), and Sinclair (1992).

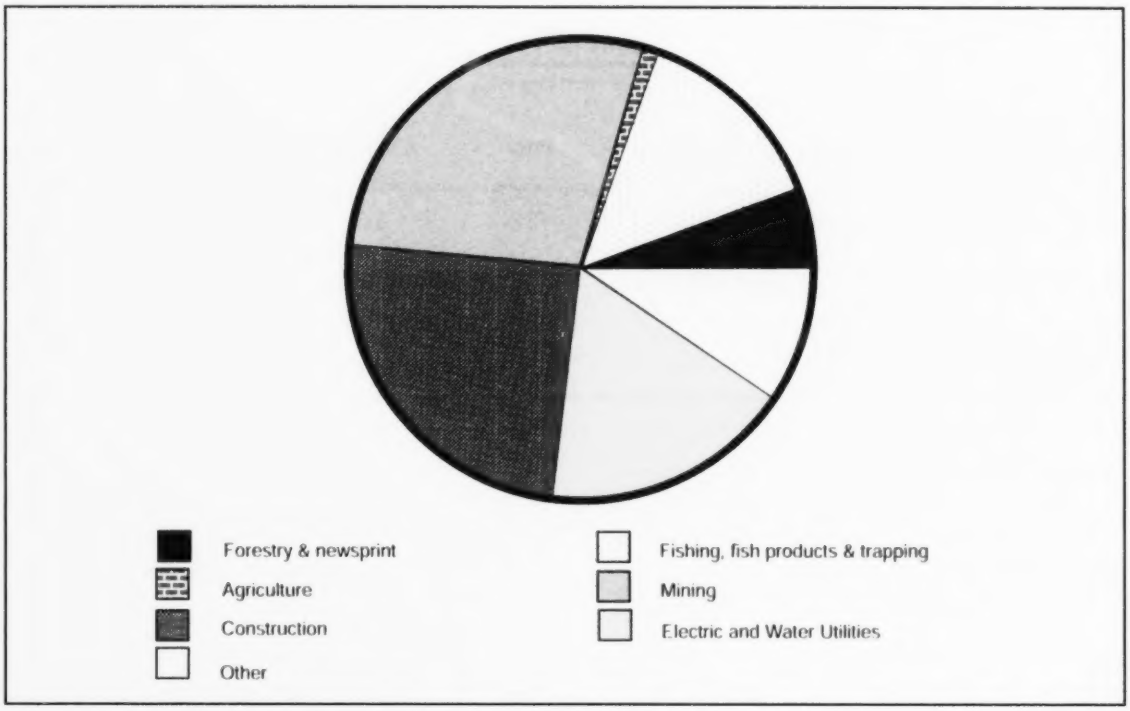

Figure 3. Industry contribution to 1998 GDP of goods-producing sector

In total, the goods-producing sectors account for almost 30% of the Newfoundland economy (Government of Newfoundland and Labrador 1999). Of this total, forestry, logging, and paper production account for 10% of the gross domestic product (Figure 3). Mining plays a relatively influential role and is expected to increase with further development of the Voisey's Bay nickel mine in Labrador. Fishing continues to play an important, albeit reduced role in the provincial economy.

Another way to examine the degree of resource dependence of a region is through the use of dependency ratios. Korber *et al.* (1998) use dependency indices to demonstrate the number of CSDs in Western Canada that depend on the forest industry. This index uses 1996 measures of income collected by Statistics Canada to demonstrate the relative importance of the forest sector in each community.[2] A measure of zero indicates no reliance on a particular sector while 100 would be complete dependence.The WNMF communities exhibit varying degrees of reliance on forestry and fishing (Table 2 and Appendix). Corner Brook is quite dependent on forestry, especially in the pulp and paper sector, as many people work at the Corner Brook mill and in related occupations. Pasadena also exhibits a moderate level of forest dependence as commuters travel to Corner Brook for employment in the mill. The town also relies somewhat on incomes from logging and services, such as tree planting and regeneration. Lark Harbour and Rocky Harbour rely more on the fishing industry, although likely less so than in the past because income from the fishing industry has decreased.

One weakness in this scale is that it only measures forest dependence in terms of incomes from forest-industry activities. Communities may also depend on the forest for subsistence activities such as hunting and fishing or for tourism-based employment. Newfoundland is one of the only provinces where domestic cutting[3] rivals industrial harvesting; many people cut their own firewood and sawlogs (Gray 1981). This increases the forest dependence of a place but is not reflected in the statistics. The sawmill industry also plays a significant role, with over 1900 mills licensed throughout the province in 1995–1996 (Newfoundland Forest Service 1996). Many of these mills are seasonal, so workers can fill the gaps between fishing seasons or employment insurance benefits with work at a mill.

[2] For a complete description of the index, including methods of calculation see Korber *et al.* (1998).

[3] Domestic cutting refers to the licensed and unlicensed harvest of timber from public land for use as firewood, saw logs, and round construction timber.

Table 2. Forest dependence indices for communities by sector, 1996

Census Division	Fishing	Forestry	Pulp	Forest Sectors		Services
				Logging	Lumber	
Pasadena	-	33.1	19.8	5.6	-	7.7
Corner Brook	-	45.4	44.1	-	-	1.3
Lark Harbour	21.5	11.9	11.9	-	-	-
Rocky Harbour	19.6	8.9	-	0.3	2.3	6.3

With so many demands on the forest, there is great concern about the timber supply on the island. Estimates for the years 2000–2015 show a shortfall of 0.5 million m^3 per year between demand by industry and what can be sustainably harvested (Newfoundland Forest Service 1996).

The Canadian Forest Service (CFS) reports the Annual Allowable Cut (AAC) for the province as 2.6 million m^3, so the shortfall amounts to roughly 20% of demand (Natural Resources Canada 1999). The CFS recognizes that, without continued commitment to adequate silviculture, careful harvesting, and long-term planning, there will be serious consequences for industry and potential cutbacks in employment. The effects may be just as serious for independent sawmills which compete for timber with the big companies (Trelawny 1994). This could be of critical importance to the communities of the Model Forest as they are quite dependent on the forest industry and forest products for their survival.

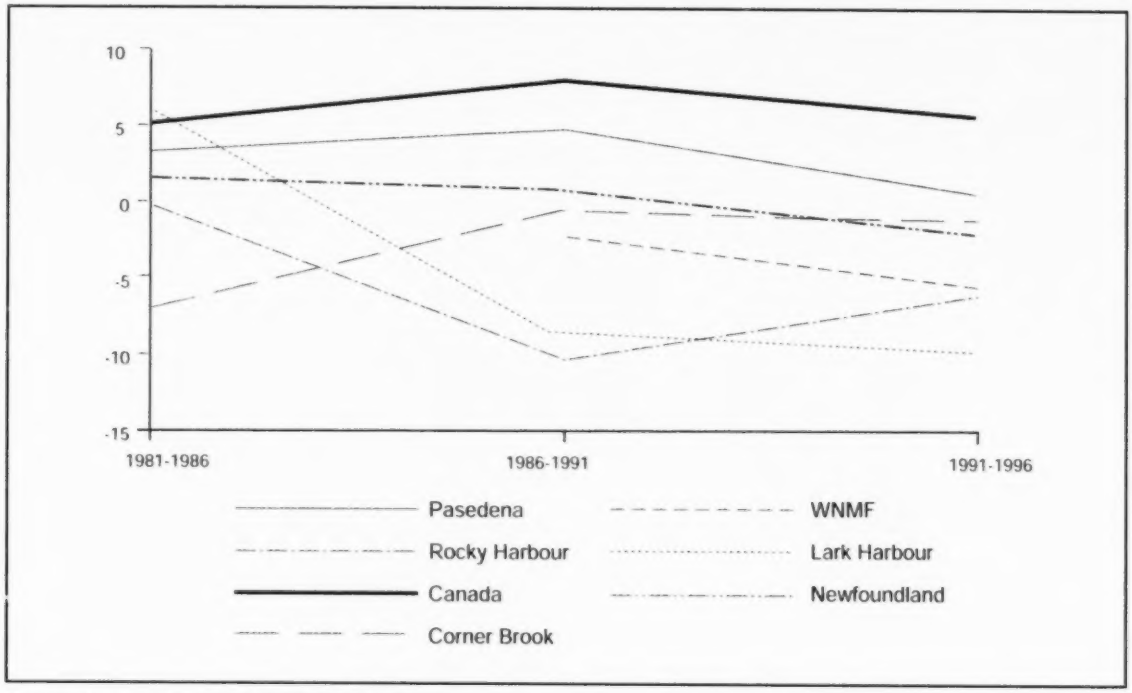

Figure 4. Population change 1986–1996

A First Look: What the Objective Indicators Reveal

The following section presents an initial look at community sustainability through the lens of objective indicators. For each indicator, a key graph is presented that illustrates a particularly important concept. Additional graphs are presented in the Appendix and are referred to within this section.[4] An even more comprehensive presentation of indicator information covering every CSD in the Model forest can be found at *www.SIMFOR.com*. Table A2 presents social-indicators data for every CSD in the Model Forest, in addition to the four CSDs highlighted throughout this paper. A key measure is given for each indicator to allow comparison among several different communities.

The population of the Model Forest and many of its constituent communities is declining. Figure 4 illustrates how, with the exception of Pasadena, each community showed negative growth for 1996, ranging from -2.3% in Corner Brook to -9.8% in Lark Harbour. This trend does not reflect the national average of nearly 6% growth between 1991 and 1996. Most of the communities do not show sharp changes in population through the three census periods but rather exhibit similar, gradual trends in population decline. Lark Harbour is an exception in that there was a moderate increase in population from 1981–1986, followed by a major decline in 1991. None of the communities show the classic boom-and-bust pattern that can often be seen in resource-dependent communities, rather they reflect a steady decline in the population base.

The above figures would suggest that people are leaving the region because of limited opportunities in western Newfoundland. Further evidence of this can be seen in the migration rates. Statistics Canada reports migration as the number of people who have moved to a CSD within the previous 5 years. In Canada, there is usually about 20% migration into any CSD, but in the various WNMF communities there is only about 10% in-migration in any 5-year period (Table A6). Statistics Canada does not collect out-migration data, but the net decline in population is due to the fact that more people migrate out of the area than migrate in. Pasadena shows consistently higher migration rates, which suggests that people are more likely to be moving in and out of the community. To a lesser extent, the same is true for Rocky Harbour. This may be a reflection of Parks Canada which rotates employees through positions frequently, requiring staff to move to new communities. Very few people are moving to Lark Harbour, likely as a result of a loss of opportunities in the fishing sector.

[4] Tables and figures that appear in the Appendix are labeled with a letter 'A' before the number to avoid confusion about where they are located. For example, Table A2 is found in the Appendix, but Table 2 is located in the text.

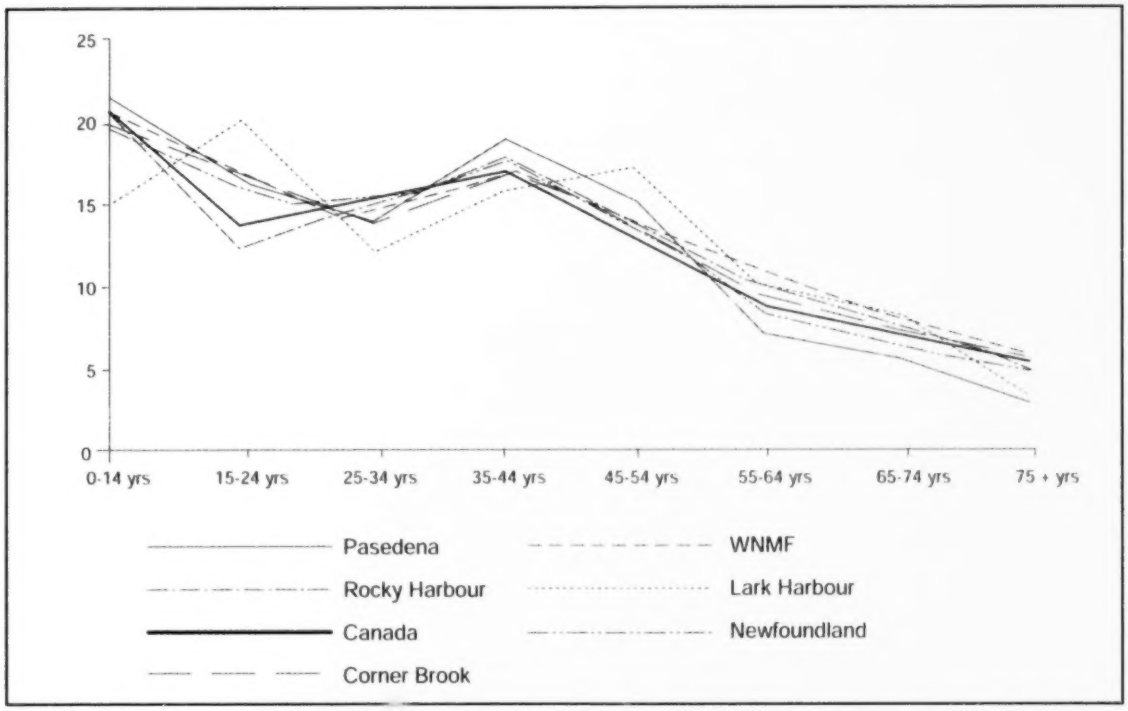

Figure 5. Percentage of total population by age cohort, 1996

The breakdown of the population by age reveals some interesting differences with the national average (Figure 5). Although the trend in these communities closely follows the Canadian figures, there are generally more people aged 15–24 in the communities, fewer 25- to 34-year-olds, and varying levels for older age groups. This suggests that, although there are many young people in these communities, many choose to leave in their early adult years. The age span of 15–24 covers the period when many people are completing their education and job training; the 25- to 34-year-olds are establishing career paths. It is also interesting to note that, in many of these communities, there is a proportionally higher number of people aged 45–64. These people may have had the opportunity to remain in their communities as the Newfoundland economy changed and thus did not seek employment elsewhere. They may also be people who have returned after a period of absence from the island.

In order for communities to survive, there must be ample access to jobs. Much has been made of the high rates of unemployment in Newfoundland and this is evident in Figure 6. The Canadian rate of unemployment, those people who are actively looking for work but are unable to find it, remained steady at approximately 10% between 1986–1996. In the WNMF, numbers are much higher for every community, soaring as high as 60% in Lark Harbour. The trend over the census periods has not shown much evidence that this is changing for the better. Both Lark Harbour and Rocky Harbour have felt the serious effects of downturns in the fishing industry, with unemployment numbers higher than the provincial average. The larger communities of Pasadena and Corner Brook, however, do exhibit better rates of employment than the provincial average. This is partly due to the fact that Corner Brook, has a greater diversity of employment possibilities. The community has three major employers: the Western Memorial Hospital (1,427 employees), Corner Brook Pulp and Paper (1,378),[5] and the School District (760). In addition, there are a variety of other employment opportunities (City of Corner Brook 1999). Corner Brook may also enjoy better rates of employment because the forest industry insulates the community from the economic downturns experienced in fishing communities. In the smaller communities, people are generally limited to a few employment sectors, such as the fishing industry in Lark Harbour or government services in Rocky Harbour (see Tables A9-A11).

[5] In a November 2000 presentation, Matt Churchill of Corner Brook Pulp and Paper reported 1450 employees. Although the number varies considerably, roughly 750–800 are workers in the woodlands division. They are scattered throughout the region. The remaining 750 are based more locally in the Corner Brook region (personal communication, Jim Taylor, 19 December 2000).

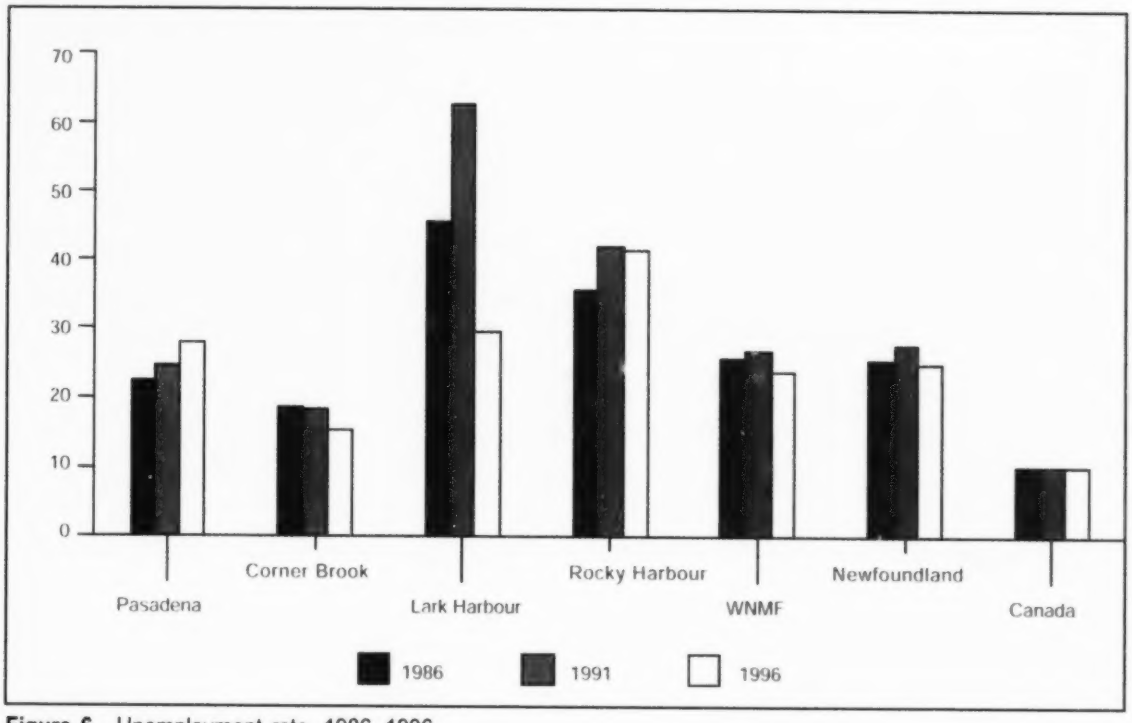

Figure 6. Unemployment rate, 1986–1996

Another important aspect of employment is equitable access to the job market. Parkins and Beckley (2001) showed that there is often a great disparity in opportunities for men and women in resource-dependent communities. One way to examine employment is through the participation rate—the number of people who are working or actively looking for work, excluding those who have given up the search for work or are retirees. In the WNMF communities, female participation rates are lower than national averages (Table A7). Male participation rates follow the same trend, with consistently fewer than national average numbers of men engaged in the labor force. However, unemployment numbers are actually more favorable for women and have shown less volatility than for men.

Income may also reflect inequities between the sexes. Women often do not have the same access to well-paid jobs in resource towns and are relegated to service positions. Men tend to dominate the workforce in forestry and mining occupations and have the best paying jobs. Income distribution for the Model Forest as a whole is fairly equitable, but women do earn proportionately lower incomes than men (Figure A6). The average male full-time salary in 1996 was $38,553; for women, it was $24,380. Women in the WNMF make only 63% of what full-time male employees do, compared with 66% for the rest of Newfoundland and 71% for Canada. This is a substantial difference that may be an area of concern for women in these communities.

Overall, incomes are generally lower for this region compared with national numbers, but they follow similar trends (Figure 7). Compared in 1996 dollars, incomes increased between 1986 and 1991 but decreased in 1996. Pasadena and Corner Brook again show better figures than the provincial average and even top Canadian figures. This can be attributed to higher and more stable incomes provided by the pulp mill, hospital, school district, and other major employers. Lark Harbour and Rocky Harbour are both well below national averages, although Rocky Harbour fares slightly better, likely due to the presence of the government service sector with Parks Canada. This pattern is reflected in the proportion of transfer payments that comprise total incomes in each of these communities (Table 3). More than 50% of the income in Lark Harbour comes from federal transfers such as employment insurance and pension payments. Both Corner Brook and Pasadena have almost the same employment income composition as the rest of the country, with slightly higher transfer payment rates. These have a strong influence on the WNMF numbers which also closely reflect the national picture.

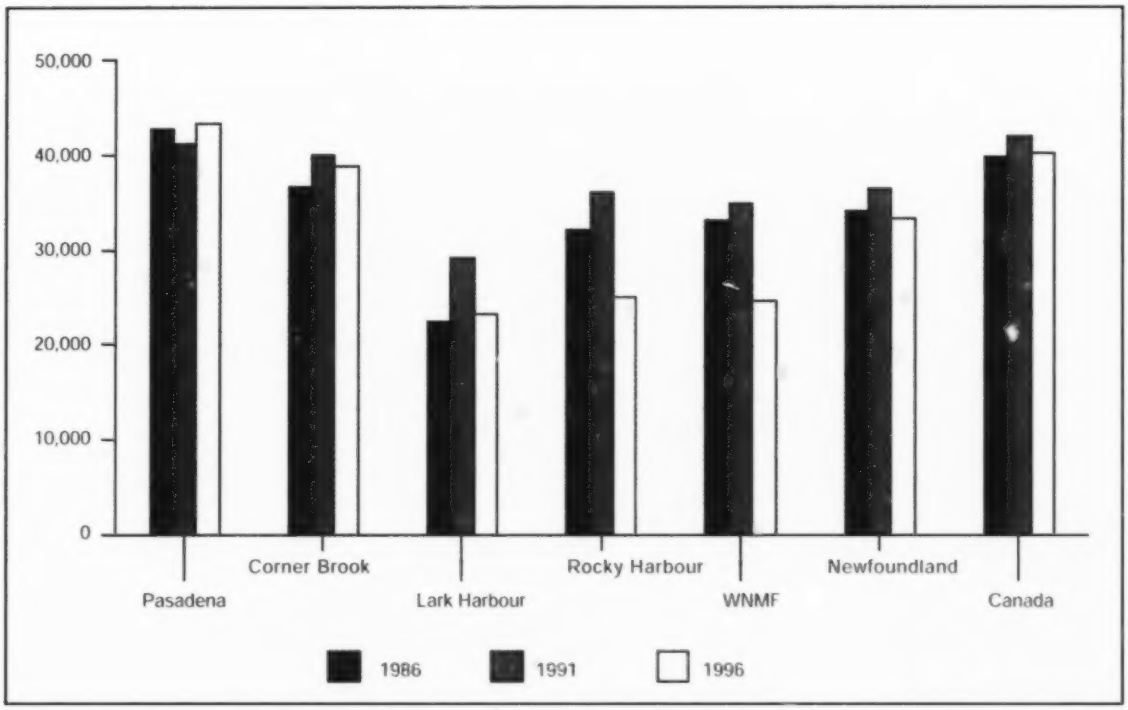

Figure 7. Median household income, 1986–1996 (adjusted to 1996 dollars)

Table 3. Proportion of income from transfer payments and employment, 1996

	Pasadena	Corner Brook	Lark Harbour	Rocky Harbour	WNMF	Newfoundland	Canada
Transfer payments	19.1	19.6	50.7	34.7	20.0	24.6	14.0
Employment income	75.1	71.6	44.6	63.6	73.0	68.1	75.3
Other	5.9	8.8	4.7	1.7	7.0	7.3	10.7

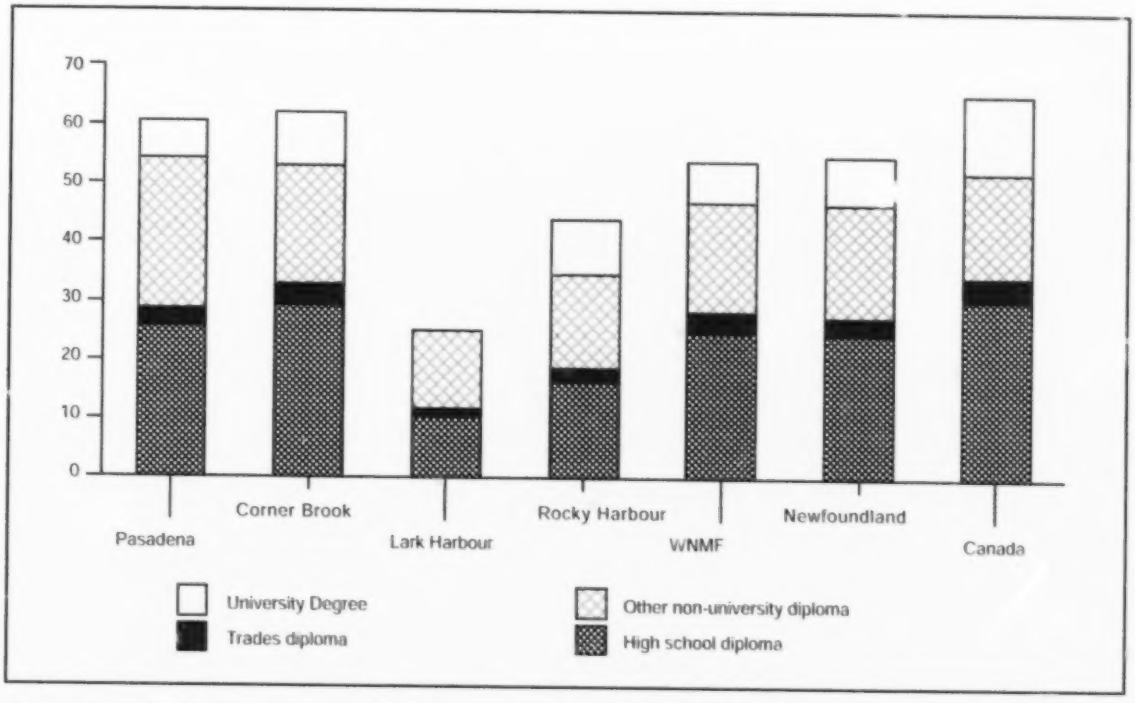

Figure 8. Highest level of educational attainment as a percentage of total population 15+, 1996

In addition to good jobs and incomes, communities must have the human resources to adapt to changing conditions and inject new perspectives. To monitor human capital, we use educational attainment as a proxy measure. There are many opportunities for students to complete an education in this region through facilities in Corner Brook. Sir Wilfred Grenfell College is a satellite campus for Memorial University of Newfoundland; it provides a variety of programs. There are also opportunities for technical training in the forest industry and other occupations at such centres as the College of the North Atlantic, Academy Canada, Canadian Career Institute of Technology, and the Western Regional School of Nursing. Many students are taking advantage of these programs, as is borne out by the full-time school attendance numbers, which are higher than provincial and national averages (Figure A7).

Educational attainment, however, does not reflect national trends in all of these communities. Figure 8 illustrates the percentage of the population who have received at least a high school diploma. Corner Brook and Pasadena have similar numbers of overall graduates as the rest of Canada and slightly more than the province. More of these graduates have technical diplomas rather than university degrees, which is likely a product of the work environment in the region. Lark Harbour has considerably lower levels of education, with less than a quarter of the population obtaining at least a high school diploma and no university degrees. Rocky Harbour is in a similar position, but once again is slightly better off because of the presence of a well-educated Parks Canada staff. The numbers suggest that these communities may not have the skills necessary for today's job market. Local skills and educational attainment reflect the requirements of a traditional resource economy. As employment in the resource sector wanes, and other sectors emerge, individuals (and by extension communities) need to adjust their human capital accordingly. School attendance numbers in the Model Forest are ahead of the rest of the country, which provides some evidence that local residents recognize the need for education to meet the labor demands of the new economy.

The previous indicators have painted a picture of difficult conditions in the smaller, more rural communities and this is reflected in the number of people living in poverty conditions. To monitor poverty, we use the incidence of low-income families and individuals living in each community. In Lark Harbour and Rocky Harbour, more families are living in poverty than in the rest of the country or in Newfoundland while in Pasadena and Corner Brook there are actually fewer (Figure 9). The same general pattern holds true for individuals, although this number is growing in Pasadena at a faster rate. Rocky Harbour has seen a major reduction in the number of individuals living in poverty.

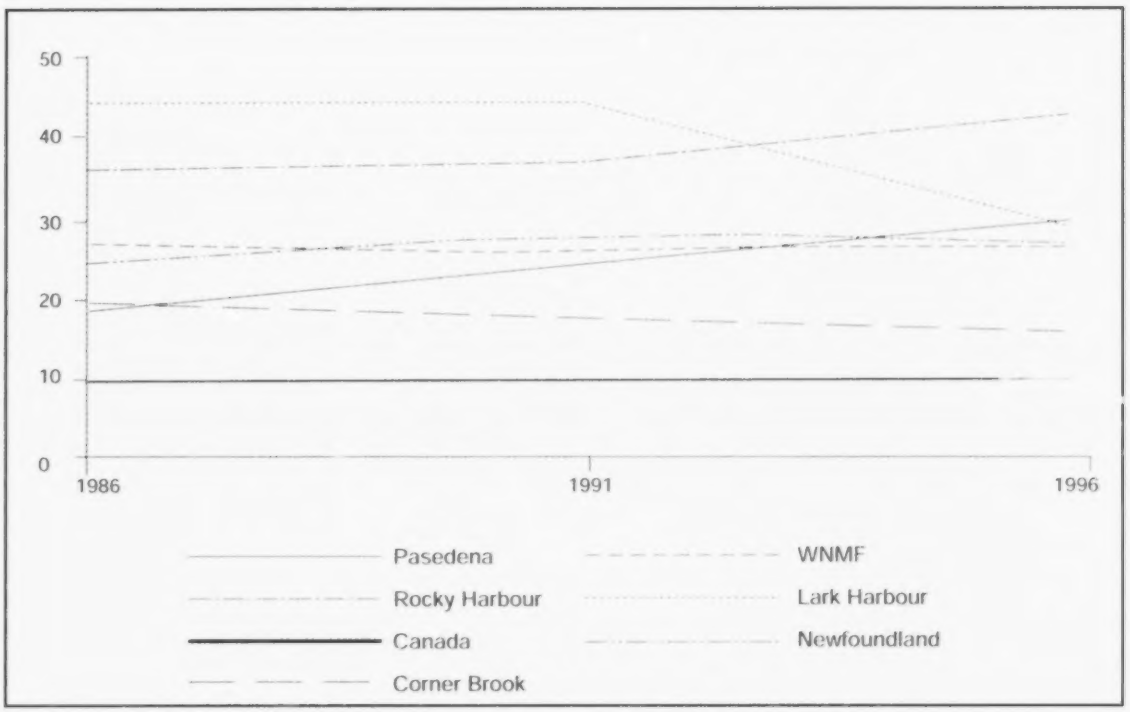

Figure 9 . Incidence of low income for economic families, 1986–1996

Real estate can be a valuable indicator of sustainability as it shows if there have been major market fluctuations, if affordable housing exists, and whether people rent or establish more fixed roots by purchasing a home. Most people do own private dwellings in this region, more so than in the rest of the country. This is especially true in smaller communities such as Lark Harbour where more than 90% of the population own their own homes (Figure A14). However, the change in the number of people owning their own dwellings between 1986–1996 is less than for the rest of Canada (Figure A15). This suggests that there are not as many new homes being built, the trend being rather the resale of existing homes. Also, there has been a steady decrease in the average number of people per household in each community, reflecting trends toward smaller family sizes.

Dwelling values have essentially mirrored national trends, with no major fluctuations over the three census periods (Figure 10). However, the value of a dwelling in the WNMF and the province as whole is approximately half the national average. This is a reflection of the general economic conditions in the province and a lower demand for real estate. Corner Brook and Pasadena both have considerably higher dwelling values than the provincial average, although it should be noted that there is a stark bimodal distribution between rural and urban real-estate values in the province. Average home values in St. John's and Gander are over $100,000, while many rural areas have much lower values. Within the Model Forest, the same contrast exists. Dwelling values in Lark Harbour are extremely low by comparison, at less than half those of the two major centers.

In summary, the indicators for each of the four communities paint different pictures. Overall the communities of the WNMF exhibit higher rates of unemployment, lower incomes, lower real-estate values, lower levels of education, and greater rates of poverty than other Canadian communities. Although the trends tend to follow national averages, they are consistently lower in value. Objective indicators in Corner Brook and Pasadena generally look better than provincial averages, however. Incomes have held steady and are higher than provincial numbers, real-estate is more valuable, and the citizens are better educated and are more likely to be employed. The situation is the opposite in Lark Harbour on virtually every measure. It is evident that the downturn in the fishing economy has had serious impacts on this community. Rocky Harbour is in a similar position although the effects have been somewhat mitigated by the presence of the National Park and the tourists it attracts.

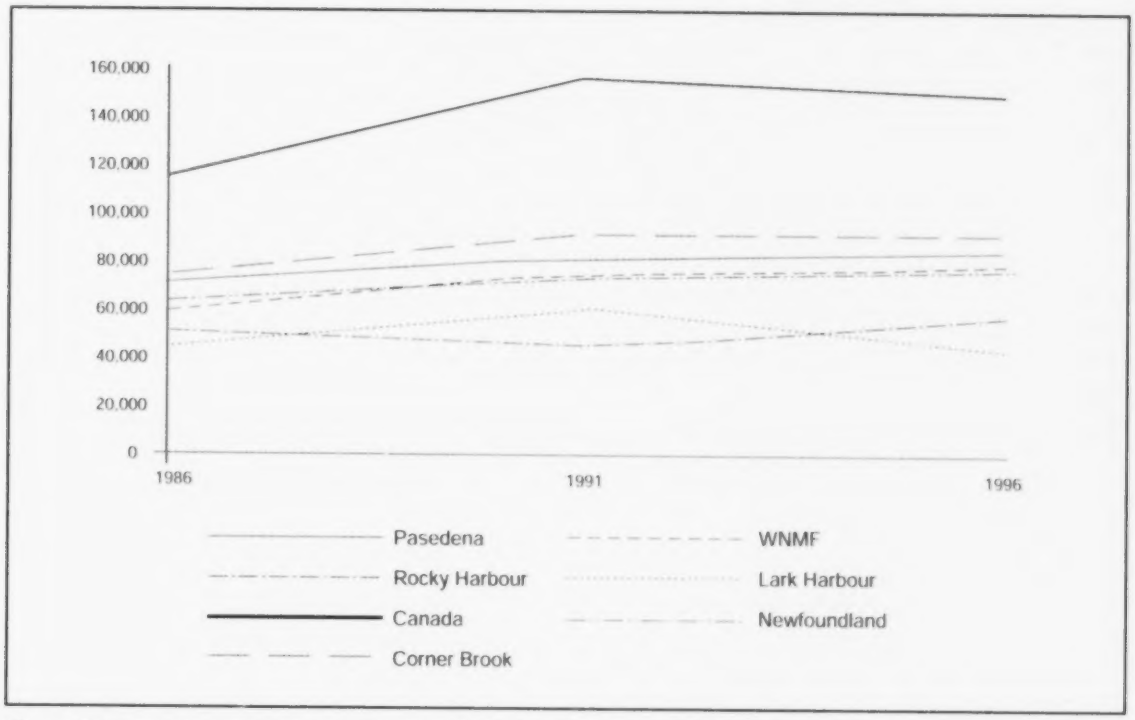

Figure 10 . Average value of a dwelling, 1986–1996 (adjusted to 1996 dollars)

Filling in the Picture: What the Subjective Indicators Reveal

The objective indicators give the impression that conditions in Western Newfoundland are fairly difficult, although often better than the vast majority of rural areas in the province. It seems likely that the communities are not very sustainable and will face difficulty in the future. However, these indicators do not necessarily reflect the views of the people living in these communities. The following section presents these viewpoints in the words of the people who live there. Direct quotes are shown in italics.

In virtually every interview, people expressed great concern about the declining population. Newfoundlanders are very aware of the statistics that show a steadily decreasing population. Many people attribute this to the fact that young people are unable to find work in these rural communities. Young people often receive their post-secondary training outside of the region and then are unable to find jobs at home that make use of their new skills. Many young people have come to expect that they will leave their communities at some point. Citizens are concerned that this will leave the province with a skewed distribution in the population.

> *Many of our young people are going. There's nothing here for them anymore. I think our age group is middle aged and a lot of seniors because we don't have a lot of new industry as of yet that can create employment for young people coming out of university. Almost everyone I know who has children in their twenties, once the kids are through university, they find work outside of the province. I don't think anyone comes back without having something to come back for.*

The departure of young people is not the only reason given for the declining population. People also believe that there are fewer people being born in the province.

> *The demographics are also different because of the smaller family sizes. The street that I grew up on in Curling, I counted in my neighborhood that in six families there was 46 youngsters when I was growing up. Now there's up to ten houses there and only two children.*

This change has occurred because of a number of different social values and family needs. Many of the older respondents spoke of how, when they were young, people had large families to help with the variety of chores that were part of a subsistence lifestyle. Children could help with fishing, hunting, woodcutting, cooking, and other necessary tasks. The presence of the Roman Catholic church was also a powerful force in promoting large families and limiting the use of birth control. Children were an essential element of a vibrant community life. As global and local economies evolve, the importance of a large family has diminished in rural Newfoundland. More often, both parents are wage earners and have less time to devote to children. It is no longer necessary to have a large family to deal with the workload of day-to-day living.

People are concerned about the declining population and its effect on community sustainability for a number of reasons. Many fear that communities will not have the resources to adapt to the ever-changing global economy. The migration of many of the brightest young minds or a so-called "brain-drain" may leave communities without a source of new ideas and energy for the challenges of the Newfoundland economy. There is also concern that there will simply not be enough people to maintain any type of economic growth. A new concern is that middle-aged people are starting to follow their children when they leave for new opportunities. Often though, there is a return migration of Newfoundlanders who leave for financial security on the mainland and then return to live the "good life" on the island (Richling 1985). People feel that one of the greatest challenges to sustainability is finding ways to keep people in the region and get back migrants by having meaningful job opportunities.

> *I don't think anybody realizes that 40% of the population is over 65. In terms of being self sustaining, it takes a completely different track if the population were younger. If you have a young population, you'll concentrate on building schools and other facilities like them. With no children, there's no point. Many people look around and realize that they are 50 years old, their kids are maybe in St. John's, likely they're in Toronto, and they wonder what the hell they're doing in Corner Brook. They don't have another family member in Corner Brook. Why would they stay? These people are leaving for different reasons than before. It's not necessarily the jobs anymore. We have to address how we can attract people to stay.*

Although there is significant population loss in the region, many don't feel that their communities are particularly transient. Corner Brook and the smaller communities maintain a fairly stable population and do not show great seasonal variation. Even though people are leaving, residents feel that they know their neighbors and do not see a continual changing of faces. Pasadena was noted as an exception to this, as many young families move in and out of the community as they change jobs. There is a stable population that has resided in the community for many years, but there is often a host of new professionals who look for a quieter place to live and raise children.

> *We see a lot of RCMP officers, federal people, bank people, that would be moving in and out of the community. As a result we get a lot of young families. Because these people were in the area for a few years, they were prepared to drive to Corner Brook or Deer Lake for work. This really is a great place to raise kids. Also it's level compared to Corner Brook's hills. Also, with all the turnover, you get a bit better of a deal on houses. When your term is served someone will come into your place. Basically though, it's had an advantage of being a very steady place over the years. There's been no boom or bust here. The population has been fairly stable, it increases a little every year. Real estate has always been safe.*

Both long-term and new residents felt that there was good mixing between the two groups, resulting in a healthy community life. No one expressed concern that community cohesion is weakened by the higher rates of moving families.

As mentioned above, the primary reason people leave Western Newfoundland is to look for jobs elsewhere. The statistics tend to support this argument by the high rates of unemployment and lower participation rates. However there is a great reliance on the Canadian social safety net that is not clearly reflected in employment and income numbers. Many Newfoundlanders rely on extending short work seasons by collecting employment insurance (EI) and through other work programs. Some people have become very creative over time in finding new ways to make this federal support network work for them. Although this does not necessarily contribute to long-term sustainability, it does reveal how many people are able to persist in the area.

> *The underground government is alive and well. Our underground economy is much bigger than most people probably realize. We're not as poor in Newfoundland as people think. On the other hand, it's like we're forced to be like this. It's justified because it can be so hard to make a living here.*

People use social assistance to their advantage but often, if they didn't, they would be in a really bad way. How can you survive on some of the programs?

Newfoundlanders have discovered a variety of ways to adapt to the system to fit their lifestyle. They use whatever combination of jobs and programs that are available to improve their lives. The following story, told by a local provincial government employee, illustrates this point clearly.

I have a cousin who now fishes maybe 4 months a year maximum. He and I talked about the ground fishery and how it affects him. I asked him if the government offered him a one-time deal to relocate and get training for a new job that offers him $45,000 a year would he take it? Right now he says that if you were going to do that, you'd need to offer him $80,000. When he's working, he makes good money. His wife doesn't really go fishing with him, but the way the system works he can split his income with her. When fishing is over, they both apply for EI and double their payments. He's off work for basically 8 months a year. He cuts his own firewood and does all the maintenance on his car and home. Because he wouldn't be able to fish and hunt in the new place, he would need $80,000 a year before taxes. That's one example. There's hundreds of different stories. They told us when we were young that we needed to stay in school or else we'd be fishermen forever and always poor. I've done everything they told me and I've got stress coming out of my ears. Most of these people have no worries. I don't live as nicely as most people in the outports.

This story illustrates another key aspect of the rural Newfoundland lifestyle—making use of the abundant natural resources available to supplement incomes. This is especially true in the smaller communities where hunting, berry-picking, fishing, woodcutting, and gardening are a still a significant part of the lifestyle (Omohundro 1994). Fewer people in Corner Brook indicated that they consider subsistence activities to comprise much of their income, although many do hunt and fish. This additional in-kind income is not included in statistical measures and may contribute significantly to many people's actual incomes because they need to purchase fewer supplies. Many of those interviewed suggested that Newfoundland communities will always be sustainable as long as people have access to adequate stocks of wildlife and other natural food sources. Often, respondents spoke of the excitement of the fall moose hunt. It has become an acceptable norm in many communities to get your moose, whether you have a license or not (Okihiro 1997).

No one in this province needs to go hungry if they don't want to. Every guy in communities up and down this coast can go out and get a moose if he wants. Even if you don't get a license, you can still get a moose. There's hardly anyone out there patrolling the woods. We've got trout in the streams and you can grow good vegetables. No one is starving here.

Subsistence activities do remain a vital part of the Newfoundland lifestyle despite other changes in the social system.

For the most part, respondents agreed with statistics that show women with fewer job opportunities than men. Many of the women interviewed stated that, because of the role of women in the past, a patriarchal attitude still exists in the province. Women are often not viewed as having the same capacity and skill as their male counterparts. This attitude is pervasive throughout the history of the province and has deep historical roots (Neis 1993). One male respondent from Lark Harbour acknowledged that he has not always fully respected the vital role his mother played.

While my Dad was out fishing, working all those long hours, my mother did just about everything else. She would cook, clean, and all those household tasks but she also cut wood, kept the garden, made us clothes, everything. Can you imagine that? There were ten of us kids and every night there was a meal on the table. In all those hard times, she managed to find food for everyone. Without women, these Newfoundland communities would never have survived.

Most of those interviewed did feel that despite this attitude, women do have the same opportunities as men for well-paid jobs. In the past, women tended to be limited to work in the fish plants and did not have access to the same fishery jobs as men. Today, with the closure of the fishery and the opening of new job markets, women enjoy some new opportunities. But like men, the main concern of many women is still finding work in the difficult Newfoundland economy (Lacey 1997).

Residents of the WNMF feel that, in general, their employment rates and incomes are higher than most of

rural Newfoundland because of the forest industry. Although most of rural Newfoundland was severely affected by the northern cod moratorium, the Western region maintained stability because of stable pulp and paper jobs. In addition, Corner Brook has developed into a service center for the western region and could be self sustaining even if forestry operations were to cease. Opinion on this issue was divided. Many people are concerned about talk of an impending wood shortage not only on the west coast but across the province. Most feel the impact on the community of the mill closing could be severe.

The town would probably limp along. The town has the hospital, which employs more people than the mill. Barry's fishery, located in Curling, employs about 400 people. The college is here. The diversity as opposed to 30 or 40 years ago is quite different. Not to say that there wouldn't be a very large impact but the town wouldn't die or anything.

A ghost town in 5 years.

We would be hurt badly if the mill shut down. I think we would lose at least 5,000 people. I'm not sure the town would ever really recover from that. The impacts would be felt up and down this coast.

Concern is also raised about the environmental impacts of the mill and how it might affect other opportunities such as domestic cutting or tourism. For the most part, people are satisfied with the how the mill operates and do not feel that there are many health risks associated with the mill. However, there is some unease that forest harvesting impacts on the landscape may affect people's ability to hunt, fish, and collect firewood and that having a single large mill discourages a diversity of forest uses. Residents and Parks Canada staff in Rocky Harbour are concerned about the effects of logging near park boundaries on the local ecology. Some also feel that a highly technological approach to forestry will promote similar consequences for the province's forests as was seen in the fishing industry. Finally, there is concern that the mill is vulnerable to global markets for pulp and may face hardship if prices falter.

I think the mill has its negatives and positives. It's positive in the sense that the mill is looking after its harvesting and wood operations and recognizing that there's a right for the rest of the province to access the forest for other uses, such as hunting and fishing. It is negative in the sense that when these companies go in to harvest an area it looks like a disaster zone. Where you have more businesses relying on tourism, this could become a problem. When people go into their areas for recreation you have to drive through these disaster zones. It looks terrible. I don't know how to get around that.

What are the impacts of forestry on communities? There's all these other factors, not just wage earning, but it's a place to live. There's a dependence not just for jobs but if you want to build a house you go out and cut your logs. That's been the tradition around here. It's where you get the fuel to heat your house. So maybe a guy is making $5-6 an hour in the sawmill, because of where he lives if you put a dollar value on the access for fuel, building materials, food gathering, and all the rest of it, it would probably equate to a mill job. If you look at the lifestyle, the quality of life is way better. Would you rather be out working in the land or sitting in a mill in Corner Brook. Of course that never makes it into the economics.

It is a common belief among residents of the WNMF that diversification of the economy is critical for long-term sustainability. In almost every interview, tourism was mentioned as one of the best ways to diversify the local economy. People spoke of the beautiful features of the western region and how tourists praise the area. Local business and commerce groups also believe that tourism holds great potential for the region if facilities are upgraded to cater to a demanding tourist market (HEDB Inc. 1997). Many people also believe that it is important to avoid technology-intensive projects but rather concentrate on a diverse range of labor-intensive, smaller businesses. However, skeptics believe that this approach has been tried in Newfoundland without success because there has not been a commitment to properly researching the value of projects. Newfoundland will always be challenged in attracting new ventures because of the harsh setting, high taxes, unskilled labor force, and tough competition from other economically depressed regions (Kennedy 1997). Speaking about a new facility that provides services for a host of light-industrial companies, one Pasadena town official stated:

We have an industrial mall that was part of a government program that has now been handed over to the town. The success of that.... we'll have to wait and see. The approach has been there for 50 years and hasn't worked but we'll see if it finally works out.

Ultimately, many feel that Newfoundlanders must apply the same ingenuity and adaptability that fueled a successful fishery for hundreds of years to all aspects of the economy. Many blame the recent problems in the province on the loss of local control to multinational companies and foreign influences. A few respondents even mentioned confederation with Canada as the beginning of the end of autonomy for Newfoundlanders over their resources.

> *One thing that has been a tradition in this province is that we're basically slaves on our own land. Every resource that we had in this province from mining, to forestry, to fisheries, the whole goddamn works, have always been taken away from here raw by some foreigner. My feeling about where Newfoundlanders have got to go now is.... If you're a foreign investor then get the hell out. We want only Newfoundlanders to own the companies that run our resource-based industries. Until that happens, it's going to keep going downhill. Our fish was stole out from under our noses because of factory freezer trawlers in Russia and that kind of thing. Same thing is happening in forestry.*

Although many living in the WNMF acknowledge that times have been difficult, they believe very few people live in actual poverty. Most people disagreed with statistics that show fairly large segments of the population living below the poverty line. Even in the smaller communities where poverty rates are the highest, people felt that the numbers were deceiving because of the lower cost of living and the variety of ways Newfoundlanders supplement income. However, most acknowledge that the problem is greater than many people in the region would like to believe. People living in low-income conditions are not readily apparent because there are no obvious good and bad parts of town. Corner Brook does have one major low-income housing section, but this area was not singled out as being much lower in stature than the rest of the city. In places like Lark Harbour, people with marginal incomes often live in similar houses and beside people who are much wealthier.

> *Money goes a lot farther in Lark Harbour than it does in Ontario or Alberta. You can be making $20,000 a year here and be doing just fine. You probably own your home outright because you built it yourself. If you need some plumbing done, you call your brother-in-law or somebody. You get a moose which keeps you in meat all winter. We certainly have people who are struggling to get by and who rely on welfare but it's not as bad as it might seem.*

Residents of Pasadena and Corner Brook expressed similar sentiments.

> *There are naturally some people who are on social services but that's a very small number. Most of the people in this community are doing just fine. We would have a very low poverty rate, very few people are on social service. It would be much lower than Corner Brook. There are a lot of professional people here, doctors, lawyers, things like that. Household incomes here are quite high. There's lots of motor-homes parked behind houses and ski-doos in driveways.*

> *We have several areas of the city that are low-rental housing. The people living there are not wanting for food to eat or clothing. Are there extra dollars there to take your child to the Arts and Culture Centre to see a program? No.*

One way for people to improve their socioeconomic conditions is to pursue higher levels of education. Residents of the WNMF agree that in smaller communities people have not taken advantage of furthering their education. Many feel that it has not been part of the cultural make-up to attend school but rather people pursued work in the same industry as their parents. In Corner Brook and Pasadena, more young people take advantage of the diversity of educational opportunities afforded them in the region. Students have access to a variety of institutions that provide training for the local job market. Still, many feel that more can be done to retrain people in rural areas who have lost work from the collapse of the fishery.

> *We had a real problem with the downturn of the fishing industry and all the money that came in with the TAGS program. In the early stages, a lot of the money was earmarked to retrain people for other things. As a result, these private schools sprung up because they could access money from TAGS to develop curriculum. Private schools were appearing in all kinds of communities. Entering into a post-secondary program was one of the conditions that people had to meet to get their money. We ended up getting an expansion of our post-secondary system. The increase was not because of an increased demand. It was artificial. We would have dozens of people training to be dog groomers for God's sake.*

A commonly expressed theme in the interviews is that education is only useful if it can be applied in the community. The above example clearly shows that the average small community does not need several people trained to groom dogs. This is contrary to the 'provide for oneself' traditions and represents an attempt to impose a market structure on an economy heavily dependent on barter and subsistence. In Lark Harbour and Rocky Harbour, people felt that there is often too much emphasis on university training when this is not always practical for the local economy. In many cases, even training in a single trade did not provide the experience necessary for the variety of situations that may arise when one works several jobs throughout the year. Many believed it is more important to have a variety of skills such as carpentry, welding, fishing, hunting, and others instead of a formal education. There is also concern that when youth achieve trades and university diplomas, they automatically leave the region to find employment. One Corner Brook businessman suggested that perhaps Newfoundland should view this as an asset rather than a liability.

> *If anything, we need to have programs that get people to come back here. I don't have a real problem with young people leaving here to go look for work in Alberta. They are only early in their career. Let Alberta pay for their mistakes. Maybe the export that we need to focus on here is education. What's wrong with Newfoundland being known as a training ground for other places? I don't have a problem with that. It would just be nice if they could come back after a few years.*

In terms of real-estate values, respondents felt that there have been very few fluctuations in the Corner Brook and Pasadena markets in recent memory. Housing has always been reasonably affordable and most people are able to own their homes. Few people rent in the region because of the reasonable prices or because they have family and friends with whom they share housing costs. The only major change in housing is the increase in the size of new dwellings. Many people noted how the newer homes were so much larger and often out of character with more traditional-sized houses. Not many of these new homes are built each year and consequently the markets have held stable throughout.

> *I'd have to say that this year that housing prices dropped a little. Nothing drastic. This is not the area where you get the big increases. Some move quickly, some are for sale forever. Someone like me who comes in and buys and then moves on in a few years will do OK. You won't make a lot of money but you probably won't lose either.*

The Statistics Canada data showed drastically lower prices for dwellings in smaller communities such as Rocky Harbour and Lark Harbour. Residents explained that this was due to the fact that so many rural people are able to build their own homes with the help of their neighbors. Often people can cut their own timber, have relatives and friends help with finishing, and construct a home as funds become available. Very few people in these communities ever have mortgages and they build a new home should they ever need to move. Therefore, it is very difficult to sell a home in smaller communities because people will just build a new home where and how they choose. Residents do not view this as a problem and are generally unconcerned about low real-estate values. The following quote from a resident of Lark Harbour not only summarizes the housing situation but also the concerns of many rural residents in general.

> *If the mill shut down tomorrow it would be drastic. We're seeing it in the small communities like ours where fishing was such a vibrant part of the lifestyle. There's been so many hard times that people just can't hang on any longer. That's where most of the out-migration has been happening. These people used to be able to do so well. They could go out into the woods and cut their own sawlogs, have their buddies come over and build their own home. I can say without fear of contradiction because I know this has been studied, that at least 80% of the homes on the Northern Peninsula are mortgage free. That's where the difficulty came in for those people who owned their own home, hunted rabbits and moose, had a garden, cut their wood, but didn't have other skills for the job market. For them to have to relocate and move is very difficult.*

Debt freedom, dense social networks, and local ecological knowledge are all "anchors" that root or attach people to place. These common elements of social life in Western Newfoundland allow people to thrive there without the benefit of a vibrant market economy. However, none of these things translate well out of the area. That is, if someone is forced to move, they cannot sell their mortgage-free house for much money. They leave their dense social networks, and their local ecological knowledge may not be transferrable to their new location.

Discussion

The census statistics paint a fairly pessimistic picture of sustainability in the Western Newfoundland Model Forest compared with the rest of the country. They show economic trends that are below national averages and that are not improving for the most part. However, some of these communities, such as Corner Brook and Pasadena, exhibit slightly better trends than other areas of Newfoundland. The subjective measures, as told through the stories of local residents, show the situation to be better than the numbers suggest. Residents of the WNMF are quite satisfied with their lives and feel a deep attachment to the region. Many believe that Newfoundlanders have the resiliency and adaptability to weather the current downturn in the wake of fishery closures and make a better future. They are also grateful to have the forest industry which buffered the region from the economic difficulties felt in other places from the loss of fishing industry. People are looking to new economic growth potentials that do not hinge on one or two major industries.

Are the communities of the Western Newfoundland Model Forest sustainable? The answer depends, in part, on whether one interprets sustainability to mean mere persistence or thriving. Newfoundlanders have demonstrated a tenacity and willingness to weather extremely difficult circumstances—eking out improbable existences under inhospitable conditions for 5 centuries. Given such a history, it is likely that Newfoundland communities will continue to persist, unless they are once again forced by government to move. Whether these communities will thrive in the future is another question. It is likely that they will, given a moderate level of employment and the continued existence of a comprehensive social safety net. The particular circumstances of western Newfoundland communities—high levels of self sustenance, an active barter economy, active labor trading, and a willingness to trade material goods for a unique way of life—mean that Newfoundlanders may thrive (enjoy a high self-perceived quality of life) without demonstrating exemplary performance according to the standard suite of social and economic indicators. A continuous decline in employment in traditional resource industries may compromise their chances to thrive, however.

Many feel that changes in technology will continue tc make traditional sustainability more difficult because mass extraction and production have reduced the number of jobs and quality of the environment. The Partnership on Sustainable Coastal Communities and Marine Ecosystems in Newfoundland and Labrador (1995) agrees with this position and states that Newfoundland communities have been sustainable for 500 years. People were able to make a living from fishing and forestry by supplementing their incomes with products from the land. The change in fishing technology from hook and line to factory trawlers decimated the resource and reduced the ability of people to fend for themselves. The report of the Partnership on Sustainable Coastal Communities suggests that it is necessary to return to a more diverse, labor-intensive workforce where people are trained with the requisite skills. The Partnership also believes it is necessary for the government to be actively involved and listen to the people for change to happen.

The provincial government appears committed to helping to achieve the goal of sustainability. The Strategic Social Plan for the province included an extensive period of public consultation to find new strategies for growth in rural communities (Government of Newfoundland and Labrador 1998). This document seeks to enhance social conditions and sustainability of communities by promoting self reliance in these places. The provincial government is optimistic about the future and wants to capitalize on the self reliance that has enabled Newfoundlanders to live successfully for generations on the island (Government of Newfoundland and Labrador 2000). They point to declining unemployment in recent years and expansion in most resource industries as positive indicators of an expanding economy.

In the long run, communities are more likely to be sustainable if people want to stay there. This study has shown that Newfoundlanders are very committed to their home and have a strong sense of the place in which they live. This is especially true in the smaller communities where many of the respondents in this study spoke of how much they love the place they live and couldn't bear the thought of leaving it. They feel they enjoy a very high quality of life despite the economic conditions because of the strong attachment to both the place and the people. Virtually every respondent spoke of the opportunities for outdoor recreation and how much it positively affects their quality of life.

> *We're the poorest province but have the biggest givers. There's going to be a sense of community in Newfoundland no matter what. I think that comes from hanging onto this rock for the last 500 years. Nobody really wants to leave here. This is paradise.*

Quality of life is the most important for me. There's great recreation. It's a great place for kids to grow up. I've got a 16-year-old son and he and his friends can go to the woods and go trouting or get some rabbits. It's all part of the quality of life. I grew up in rural Newfoundland and the woods is like your second school.

The residents of Lark Harbour have tried to use this sense of place in developing a strategy for long-term sustainability. They participated in the production of a community profile and a mapping of special places project to better understand their strengths and weaknesses (Outer Bay of Islands Round Table 1996). This document outlines historical, cultural, and environmental aspects of the community and looks for ways that residents might build a strong future. This community-based strategy is important in charting a course for sustainability because it draws directly on what the local people believe to be important. The town of Pasadena has taken a slightly different, but also valuable approach by drafting a municipal plan that promotes their vision of an environmentally sound community that promotes light and diversified industry (Baird Planning Associates 1999).

The sense of place that is so important in smaller communities does exist in a larger center like Corner Brook, although it is somewhat different. People there spoke of being attached to the beauty of the landscape but felt fewer ties to their immediate neighbors, largely because they do not know them as well as people in smaller communities do.

Newfoundland is more my community. Nothing is really keeping me here. I don't feel a strong sense of attachment to Steady Brook or Corner Brook or Western Newfoundland. I couldn't leave the province though. I'd be happy in many different places. If my family leaves then I'll leave.

Most do agree that in times of difficulty, people will come together to help each other solve problems and provide support. During the preparation for the Canada Winter Games held in February 1999, many people came out to volunteer with planning activities and feel that this helped bring the community closer together.

Additional research on sense of place in the Western Newfoundland Model Forest would help to better comprehend sustainability in the region. Understanding why Newfoundlanders are so attached to their places and what factors eventually cause them to leave is essential for assessing the long-term prospects for the area. Are people attached to their cultural traditions, social networks, aspects of the physical environment, or something else? By better understanding the nature and types of attachment, community members can better understand what people desire from the region and identify ways to use local resources that do not conflict with place meanings.

Conclusion

In this study, we have shown that it can be beneficial to examine more than one type of social indicator. The census data are very useful in highlighting some of the major trends and issues in community sustainability. They are also helpful when comparing different regions of the country, because the numbers are collected using the same methods and apply nationally. However, the statistical measures fail to capture some significant aspects of community life that are critical to sustainability. For example, without consulting people, we would not have known that housing prices are so low in Lark Harbour because people frequently build their own homes. We also would not have understood the high level of subsistence activity and its importance to the livelihood of many rural Newfoundlanders. Using multiple types of indicators and measures paints a more complete picture of the sustainability puzzle. Even using secondary-source methods, such as journals, local newspapers, and books, can provide a better understanding.

The communities of the Western Newfoundland Model Forest face some serious challenges for sustainability. For centuries, Newfoundlanders have sustained their communities through their adaptability, persistence, and independent spirit. They have used the natural resources of the province for both their occupations and everyday survival. When times were bad, people were able to subsist on whatever they could glean from the forests, oceans, and lakes. This ingenuity will be important in the future to deal with the some of the issues facing the province. Part of this strategy will require making the best use of the forest resources. Newfoundlanders will also be challenged to maintain their communities in the face of the pressures of globalization, a force that is changing economies and communities worldwide

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Table A1. Dependency ratios for Western Newfoundland Model Forest CSDs, 1996

Census Division	Fishing	Forestry	Forestry Sectors			Services
			Pulp	Logging	Lumber	
Corner Brook	-	45.4	44.1	-	-	1.3
Cow Head	20.6	0.7	-	0.7	-	-
Cox's Cove	18.5	4.8	-	3.1	1.8	-
Deer Lake	-	10.0	1.4	8.7	-	-
Gillams	-	12.6	12.6	-	-	-
Glenburnie	-	8.5	-	8.5	-	-
Howley	-	5.9	-	-	5.9	-
Hughes Brook	-	-	-	-	-	-
Humber South	19.6	33.0	29.0	3.2	0.8	-
Irishtown-Summerside	-	34.4	32.9	-	1.5	-
Lark Harbour	21.5	11.9	11.9	-	-	-
Massey Drive	-	34.5	27.3	-	-	7.2
McIver's	21.8	24.3	14.6	-	-	9.7
Meadows	-	39.6	39.6	-	-	-
Mount Moriah	6.3	19.0	19.0	-	-	-
Norris Point	-	3.1	-	-	3.1	-
Pasadena	-	33.1	19.8	5.6	-	7.7
Rocky Harbour	19.6	8.9	-	0.3	2.3	6.3
St. Paul's	-	20.2	8.8	11.4	-	-
Steady Brook	2.5	13.4	13.4	-	-	-
Trout River	25.3	4.4	-	-	4.4	-
Woody Point	51.4	11.4	-	-	-	11.4
York Harbour	39.4	-	-	-	-	-

Table A2. Selected indicators for Western Newfoundland Model Forest CSDs.

	Population change 1991–1996	Migration rate 1996	Change in income 1986–1996	Unemployment rate 1996	Change in value of dwelling 1986–1996	Poverty rate for economic families 1996	Percentage with some post-secondary
Canada	5.7	20.3	1.0	10.1	29.1	16.3	50.9
Newfoundland	-2.9	12.1	2.2	25.1	10.7	19.9	44.8
WNMF	-0.6	12.7	-1.0	24.0	17.9	20.0	43.0
Corner Brook	-2.3	12.8	-5.5	15.4	22.8	18.1	49.8
Cow Head	-4.5	13.9	1.7	36.9	-27.1	21.3	29.5
Cox's Cove	-4.6	4.7	-15.9	56.7	-10.5	31.5	14.7
Deer Lake	1.2	13.1	-3.8	31.6	14.9	21.9	38.0
Gillams	-6.3	7.8	55.4	34.0	1.9	13.8	40.3
Glenburnie	-12.1	8.3	34.6	62.5	-1.2	9.3	23.1
Howley	-7.4	11.1	-27.5	50.0	-10.5	32.6	7.5
Hughes Brook	9.0	n.a.	n.a.	42.9	25.5	n.a.	57.7
Humber South	-5.4	8.8	16.1	40.8	61.0	27.0	33.2
Irish-Summer	-8.7	9.4	n.a.	28.0	6.0	24.6	36.2
Lark Harbour	-9.8	0.0	-4.3	29.7	-6.0	29.8	22.4
Massey Drive	18.9	13.3	26.4	14.5	41.3	11.5	50.5
McIver's	-8.0	4.8	38.6	32.2	13.2	14.9	28.7
Meadows	2.5	12.1	38.1	21.9	-4.2	26.9	37.7
Mount Moriah	3.0	5.0	-10.6	21.7	-2.3	16.2	39.8
Norris Point	-8.3	9.7	-27.5	32.5	-31.7	32.7	40.2
Pasadena	0.5	22.5	-1.4	27.9	19.4	15.0	49.6
Rocky Harbour	-6.3	9.4	28.4	41.3	12.3	25.4	33.3
St. Paul's	-14.3	4.2	-33.0	40.9	-34.0	46.2	14.0
Steady Brook	-1.2	50.6	-24.4	12.2	43.2	5.6	62.7
Trout River	-9.8	2.3	15.1	40.0	38.5	29.5	18.4
Woody Point	-1.2	16.9	15.8	46.9	2.7	20.1	33.8
York Harbour	0.2	2.5	-3.8	22.6	-6.8	27.5	35.8

Population Measures

Table A3. Percentage population change

Census Division	1981–1986	1986–1991	1991–1996
Pasadena	3.4	4.9	0.5
Corner Brook	-6.7	-1.4	-2.3
Lark Harbour	5.9	-8.9	-9.8
Rocky Harbour	-0.4	-10.3	-6.3
WNMF	N/A	-3.6	-5.6
Newfoundland	0.1	0	-2.9
Canada	5.1	7.9	5.7

Table A4. Male population by age cohorts, 1996

Census Division	Male population	Male pop. % of ttl. pop.	0–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Pasadena	1,715	49.8	395	285	215	315	250	125	90	40
Corner Brook	10,515	48.0	2,010	1,645	1,415	1,710	1,495	1,005	790	445
Lark Harbour	340	50.4	55	65	40	50	60	35	30	5
Rocky Harbour	535	50.5	110	70	70	95	75	45	40	30
WNMF	22,955	49.2	4735	3755	3030	3845	3105	2155	1545	785
Newfoundland	272,580	49.4	56,195	44,745	41,160	45,005	36,625	22,470	16,310	10,070
Canada	14,170,030	49.1	3,025,210	1,955,185	2,226,965	2,403,010	1,847,515	1,224,320	943,365	544,460

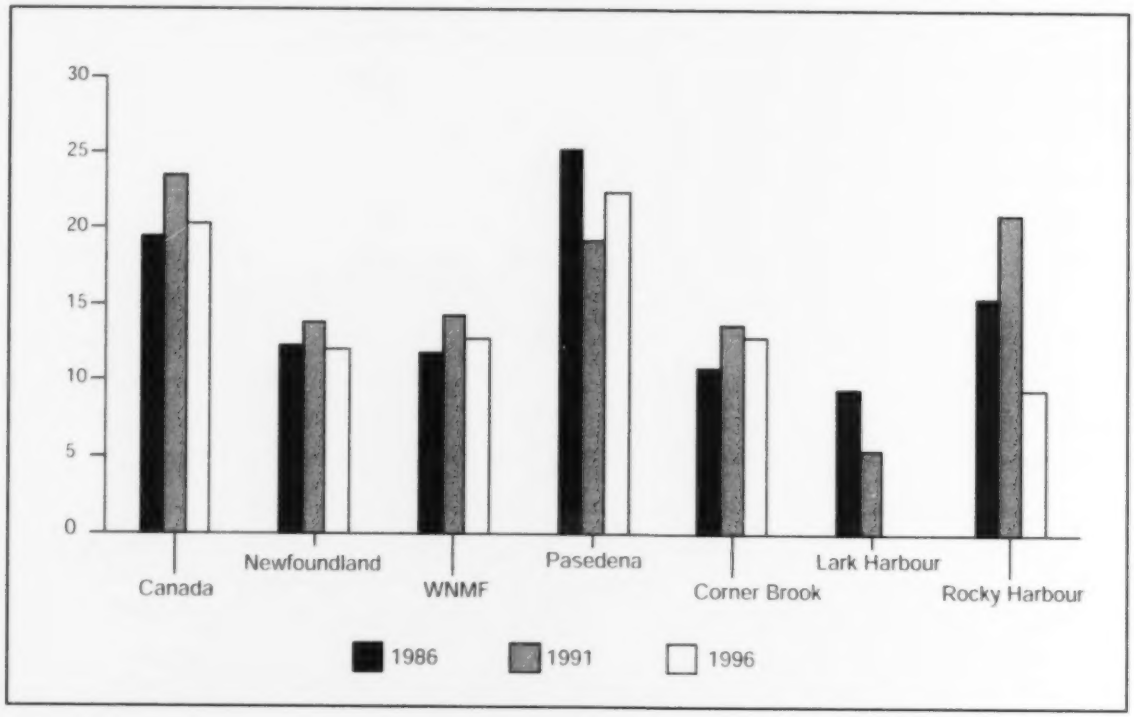
Table A5. Female population by age cohorts, 1996

Census Division	Female population	Female pop. % of ttl. pop.	0–14	15–24	25–34	35–44	45–54	55–64	65–74	75+
Pasadena	1,730	50.2	340	280	260	330	265	110	95	50
Corner Brook	11,385	52.0	1,910	1,775	1,575	1,885	1,510	1,130	885	715
Lark Harbour	335	49.6	45	70	40	55	55	30	25	15
Rocky Harbour	525	49.5	105	60	90	95	65	50	40	20
WNMF	23,690	50.8	4415	3580	3640	3970	3275	2110	1620	1080
Newfoundland	279,220	50.6	53,600	43,625	43,880	46,690	36,265	22,065	17,890	15,205
Canada	14,676,735	50.9	2,876,065	1,901,990	2,271,945	2,458,695	1,862,880	1,265,140	1,118,570	921,450

Table A6. Migration rates, 1986–1996

Year	Canada	Newfoundland	WNMF	Pasadena	Corner Brook	Lark Harbour	Rocky Harbour
1986	19.5	12.3	11.8	25.2	10.9	9.4	15.5
1991	23.5	13.8	14.3	19.2	13.6	5.4	21.0
1996	20.3	12.1	12.7	22.5	12.8	0.0	9.4

Figure A1. Migration rates, 1986–1996



Employment Measures

Table A7. Unemployment and participation rates by sex, 1986–1996

	1996				1991				1986			
	unemployment rate		participation rate		unemployment rate		participation rate		unemployment rate		participation rate	
Census Division	male	female	male	female	male	female	male	female	male	female	male	female
Pasadena	29.7	25.5	65.8	54.2	24.9	24.1	71.3	52.6	18.9	27.5	72.6	47.8
Corner Brook	17.2	13.4	63.8	51.3	18.0	18.6	70.2	53.7	19.3	18.1	70.3	49.0
Lark Harbour	29.4	26.7	58.6	51.7	44.4	83.9	61.0	50.0	44.4	51.5	68.2	62.3
Rocky Harbour	42.9	40.4	65.9	54.7	36.9	50.0	73.0	58.1	36.0	37.5	75.0	57.1
WNMF	27.0	21.0	64.0	49.0	26.0	28.0	69.0	53.0	26.0	27.0	71.0	48.0
Newfoundland	26.9	22.9	63.0	49.7	28.4	27.0	68.9	53.7	24.6	27.1	70.2	48.4
Canada	10.2	10.0	72.7	58.6	10.1	10.2	76.4	59.9	9.6	11.2	77.5	55.9

Table A8. Full-time and part-time employment and income, 1996

Census Division	Number of full-time employed		Average full-time employment income		Number of part-time employed		Average part-time employment income	
	males	females	males	females	males	females	males	females
Pasadena	440	325	43,073	23,655	395	420	13,665	7,914
Corner Brook	3,030	2,265	39,268	24,997	2,290	2,705	16,182	9,669
Lark Harbour	0	10	0	15,600	155	135	11,416	6,906
Rocky Harbour	60	70	39,724	30,867	180	150	16,585	7,740
WNMF	5,085	3,785	38,553	24,380	6,210	5,920	14,658	8,294
Newfoundland	56,850	43,220	40,064	26,353	76,110	65,520	15,153	8,568
Canada	4,514,850	2,998,940	42,488	30,130	3,329,880	3,712,545	18,672	12,727

Table A9. Census subdivisions by broad occupation category and sex, 1996

Standard Occupations	Pasadena	Corner Brook	Lark Harbour	Rocky Harbour	Newfoundland	WNMF
All industries	1,505	9,655	305	465	229,245	19,915
Primary industries	95	210	60	60	19,445	1,180
Manufacturing	135	1,090	45	30	22,090	2,445
Construction	180	455	10	55	17,215	1,535
Transportation, communication, and other utilities	120	530	10	10	17,515	1,310
Wholesale and retail trade	235	2,160	75	40	39,875	4,105
Finance, insurance, and real estate	50	410	0	0	6,965	610
Government, health, education, and social services	430	3,100	70	175	68,665	5,450
Business, accommodation, food, and other services	245	1,705	35	80	37,475	3,270

Table A10. Census subdivisions by broad occupation category and sex, 1991

Standard Occupations	Pasadena	Corner Brook	Lark Harbour	Rocky Harbour	Newfoundland	WNMF
All industries	1,505	10,690	310	570	258,535	21,660
Primary industries	115	175	30	85	21,575	1,105
Manufacturing	90	1,200	125	40	34,945	2,750
Construction	120	605	40	55	18,155	1,915
Transportation, communication, and other utilities	125	860	10	30	19,725	1,715
Wholesale and retail trade	310	2,540	20	55	44,505	4,530
Finance, insurance, and real estate	45	425	0	10	7,340	660
Government, health, education, and social services	480	3,225	65	170	76,000	5,730
Business, accommodation, food, and other services	210	1,655	40	115	36,295	3,240

Table A11. Census subdivisions by broad occupation category and sex, 1986

Standard Occupations	Pasadena	Corner Brook	Lark Harbour	Rocky Harbour	Newfoundland	WNMF
All industries	1,295	10,025	385	565	236,675	20,675
Primary industries	50	165	70	80	21,630	1,325
Manufacturing	135	1,265	175	50	36,140	2,705
Construction	95	470	25	70	14,945	1,375
Transportation, communication, and other utilities	75	715	25	25	18,990	1,470
Wholesale and retail trade	310	2,420	40	105	38,740	4,400
Finance, insurance, and real estate	75	390	0	15	6,875	670
Government, health, education, and social services	190	1,060	10	50	29,215	5,615
Business, accommodation, food, and other services	375	3,540	35	170	70,145	3,110

Figure A2. Female participation rates, 1986–1996

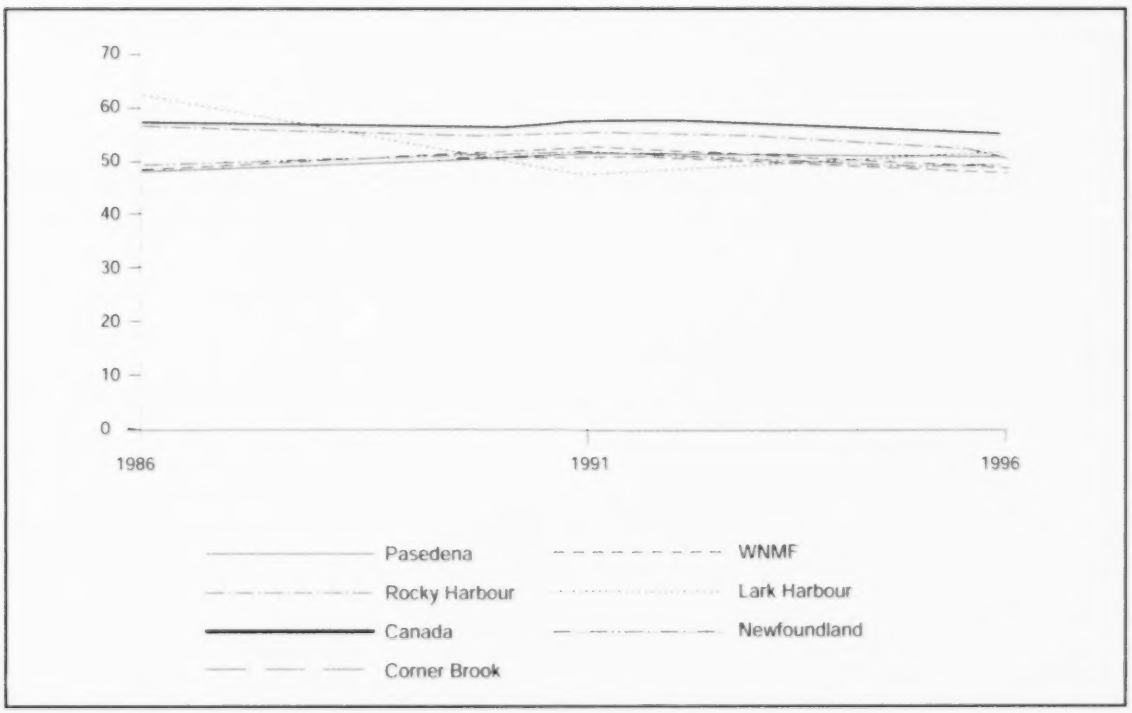


Figure A3. Female unemployment rates, 1986–1996

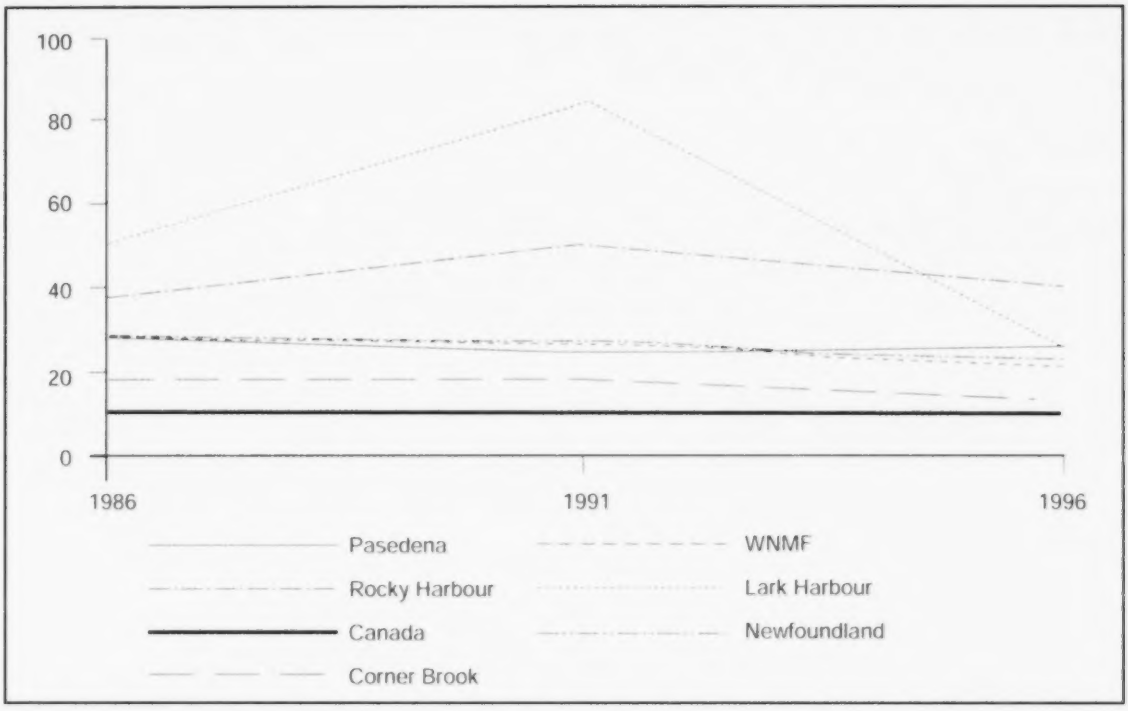


Figure A4. Male participation rates, 1986–1996

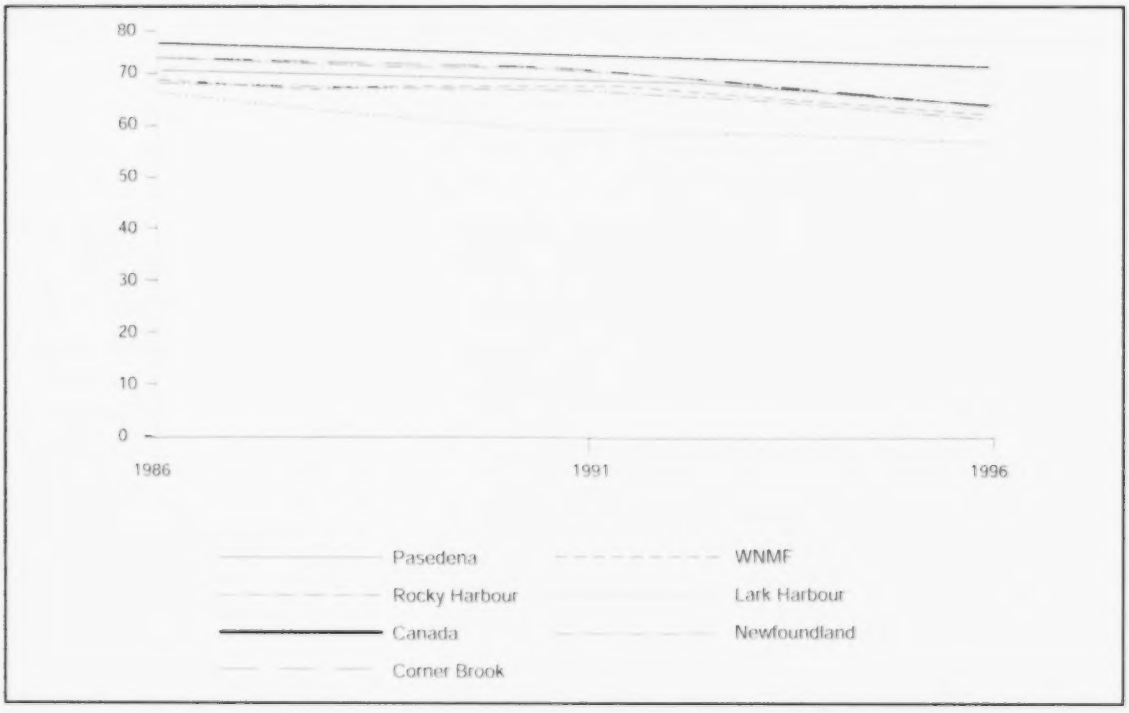
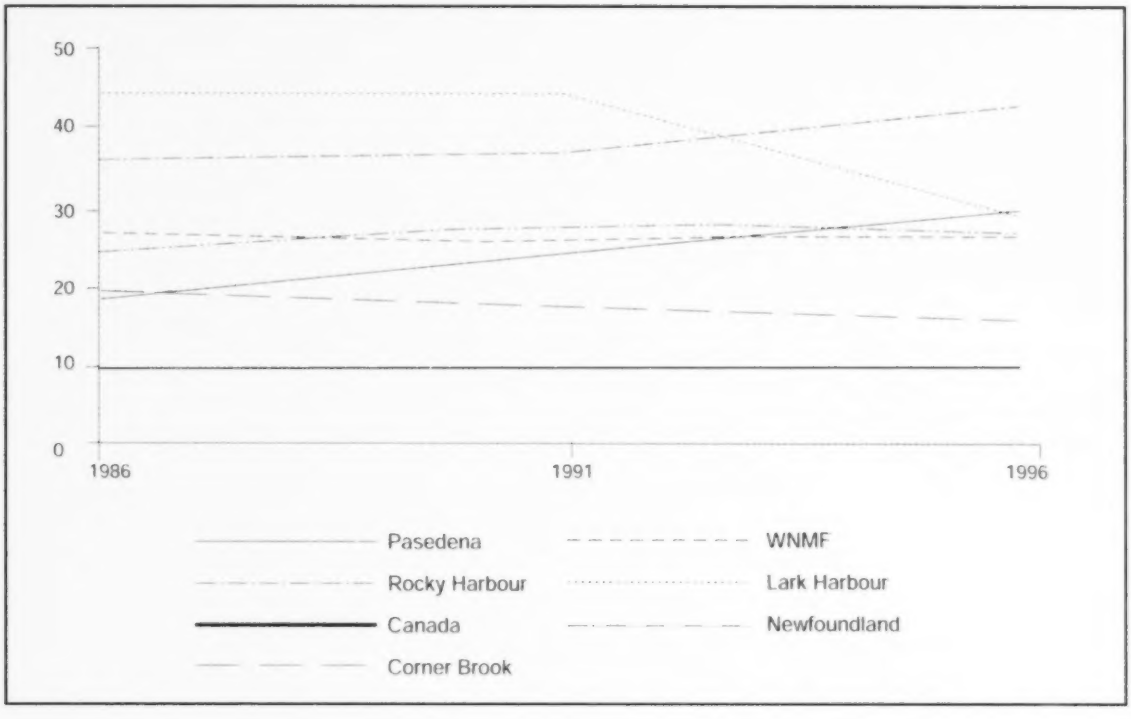


Figure A5. Male unemployment rates, 1986–1996



Income Measures

Table A12. Median household income, 1986–1996*

Census division	1996	1991	1986
Pasadena	42,853	41,158	43,458
Corner Brook	36,694	40,018	38,836
Lark Harbour	22,271	29,132	23,261
Rocky Harbour	32,135	36,167	25,032
WNMF	33,006	34,744	24,690
Newfoundland	34,036	36,464	33,291
Canada	40,209	41,822	39,795

*adjusted to 1996 dollars

Table A13. Percentage change in median household income, 1986–1996*

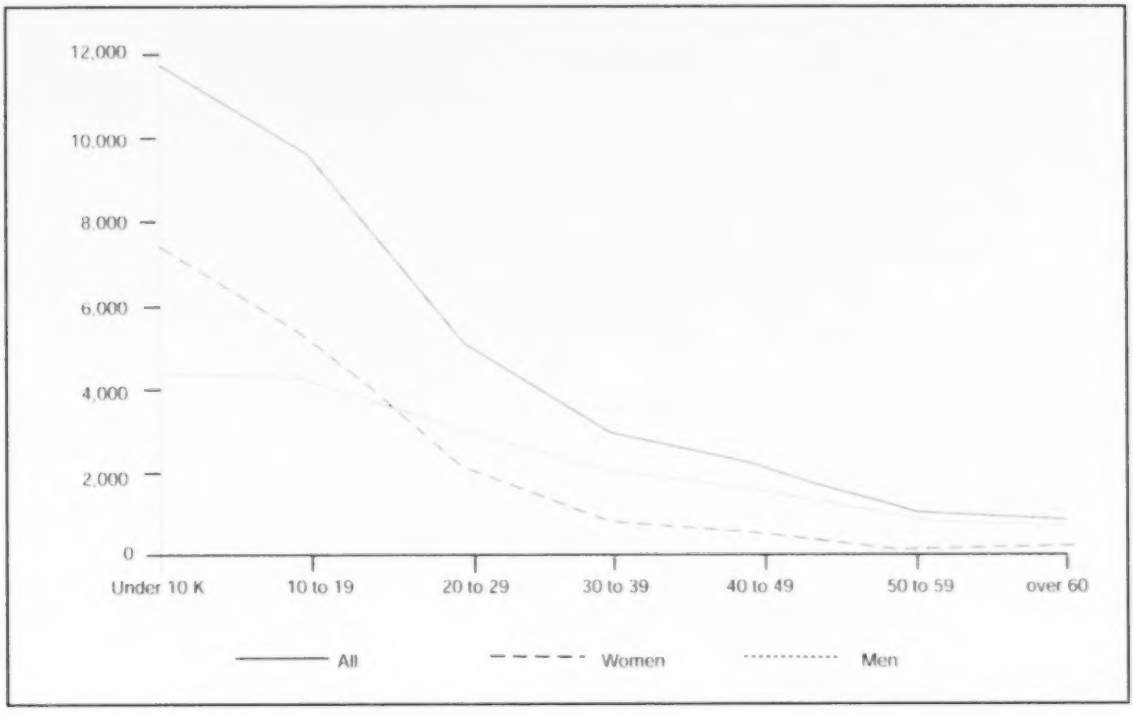
Census division	Percent change in median income		
	1986 1991	1991 1996	1986 1996
Pasadena	-5.3	4.1	-1.4
Corner Brook	3.0	-8.3	-5.5
Lark Harbour	25.2	-23.6	-4.3
Rocky Harbour	44.5	-11.1	28.4
WNMF	40.7	-5.0	33.7
Newfoundland	9.5	-6.7	2.2
Canada	5.1	-3.9	1.0

*adjusted to 1996 dollars

Table A14. Percentage of population by income range and sex, census subdivisions, 1996

Income range	Pasadena		Corner Brook		Lark Harbour		Rocky Harbour		WNMF		Newfoundland		Canada	
	male	female	male	female	male	female	male	female	male	female	male	female	male	female
under $1000	1.6	3.2	2.1	3.6	2.8	2.8	2.6	3.3	2.6	3.9	3.0	4.0	2.6	3.1
1,000 2,999	2.5	5.9	3.0	3.8	4.6	11.0	5.9	3.9	3.1	4.2	3.1	4.0	2.0	3.1
3,000 4,999	2.0	1.6	2.1	3.5	0.0	5.5	1.3	2.0	2.0	3.6	2.0	3.3	1.7	2.7
5,000 6,999	1.8	5.0	2.1	3.7	3.7	4.6	1.3	5.9	2.4	3.7	2.0	3.6	2.0	3.2
7,000 9,999	3.2	7.9	2.5	6.6	1.8	5.5	3.3	5.9	3.0	6.8	3.7	6.3	2.9	4.7
10,000 14,999	5.0	7.9	6.2	10.2	14.7	6.4	10.5	9.9	7.0	10.6	7.3	10.5	5.2	8.7
15,000 19,999	6.1	3.6	5.1	5.2	8.3	6.4	7.9	4.6	6.1	5.0	5.6	4.7	4.3	5.6
20,000 24,999	4.5	5.0	4.4	5.0	8.3	1.8	3.9	5.9	4.8	4.4	4.9	3.7	4.1	4.4
25,000 29,999	3.8	2.9	3.4	2.7	3.7	1.8	2.6	2.0	4.0	2.1	4.0	2.5	3.9	3.7
30,000 39,999	8.4	2.5	6.7	3.6	4.6	0.0	6.6	0.0	6.2	2.5	6.1	3.1	7.2	5.2
40,000 49,999	6.3	2.0	5.5	2.1	0.0	0.0	4.6	3.3	4.8	1.6	4.1	1.7	5.3	2.7
50,000 and over	7.0	0.5	5.8	0.9	1.8	0.0	2.6	0.0	4.9	0.7	5.7	1.1	9.1	2.7
Percent total	52.1	47.9	49.1	50.9	54.1	45.9	53.3	46.7	50.8	49.2	51.4	48.6	50.3	49.7

Figure A6. Income distribution for Western Newfoundland Model Forest, 1996



Human Capital Measures

Table A15. Population 15+ years by level of education, 1996

Census Divisions	Total population	Less than grade 9	Gr. 9 -13 no certificate	Gr. 9 -13 certificate	Trades diploma	Other non-university, no diploma	Other non-university, diploma	University, no degree	University, with degree
Pasadena	2,710	300	775	290	85	05	690	295	170
Corner Brook	17,780	2,245	4,520	2,160	595	755	3,550	2,325	1,625
Lark Harbour	580	220	210	15	10	20	75	25	0
Rocky Harbour	855	290	190	90	20	10	135	40	80
WNMF	37,505	6,680	10,655	4,060	1,230	1,325	7,035	3,915	2,605
Newfoundland	437,345	76,465	122,065	43,040	12,810	17,360	83,440	46,645	35,520
Canada	22,628,925	2,727,210	5,140,790	3,238,590	837,155	1,474,925	4,012,580	2,196,890	3,000,780

Table A16. Highest level of educational attainment for those 15+, 1996

Census Divisions	Total population	High school diploma	Trades diploma	Other non-university diploma	University degree
Pasadena	2,710	690	85	690	170
Corner Brook	17,780	5,240	595	3,550	1,625
Lark Harbour	580	60	10	75	0
Rocky Harbour	855	140	20	135	80
WNMF	37,505	9,300	1,230	7,035	2,605
Newfoundland	437,345	107,045	12,810	83,440	35,520
Canada	22,628,925	6,910,405	837,155	4,012,580	3,000,780

Table A17. Educational categories as a percentage of total population 15+ years, 1996

Census Divisions	Total population	Less than grade 9	Gr. 9–13	Some trades or non-university	Some university
Pasadena	2,710	11.1	39.3	32.5	17.2
Corner Brook	17,780	12.6	37.6	27.6	22.2
Lark Harbour	580	37.9	38.8	18.1	4.3
Rocky Harbour	855	33.9	32.7	19.3	14.0
WNMF	37,505	17.8	39.2	25.6	17.4
Newfoundland	437,345	17.5	37.8	26.0	18.8
Canada	22,628,925	12.1	37.0	27.9	23.0

Table A18. Educational categories as a percentage of total population 15+ years, 1986

Census Divisions	Total population	Less than grade 9	Gr. 9–13	Some trades or non-university	Some university
Pasadena	2,230	13.2	43.3	28.9	15.5
Corner Brook	17,565	19.5	40.2	22.3	17.9
Lark Harbour	595	40.3	46.2	9.2	5.0
Rocky Harbour	920	38.0	37.5	15.8	8.2
WNMF	36,360	25.3	40.8	20.1	13.8
Newfoundland	417,205	26.6	39.9	19.6	13.9
Canada	19,634,100	17.3	39.9	24.4	18.4

Table A19. School attendance of population 15–24, 1991–1996

	Pasadena	Corner Brook	Lark Harbour	Rocky Harbour	WNMF	Newfoundland	Canada
1996							
Total population (15–24)	565	3,420	130	125	7,340	88,235	3,849,025
Attending school full time	72.5%	64.9%	61.5%	36%	62.4%	60.5%	59.1%
Attending school part time	1.7%	2.0%	0	8.0%	2.6%	3.5%	6.1%
1991							
Total population (15–24)	525	3,745	155	230	8,045	101,700	3,832,820
Attending school full time	72.3%	62.4%	64.5%	60.1%	59.7%	55.8%	55.4%
Attending school part time	3.8%	5.1%	16.1%	0	4.4%	4.2%	6.2%

Figure A7. Change in full-time school attendance for those 15–24, 1991–1996

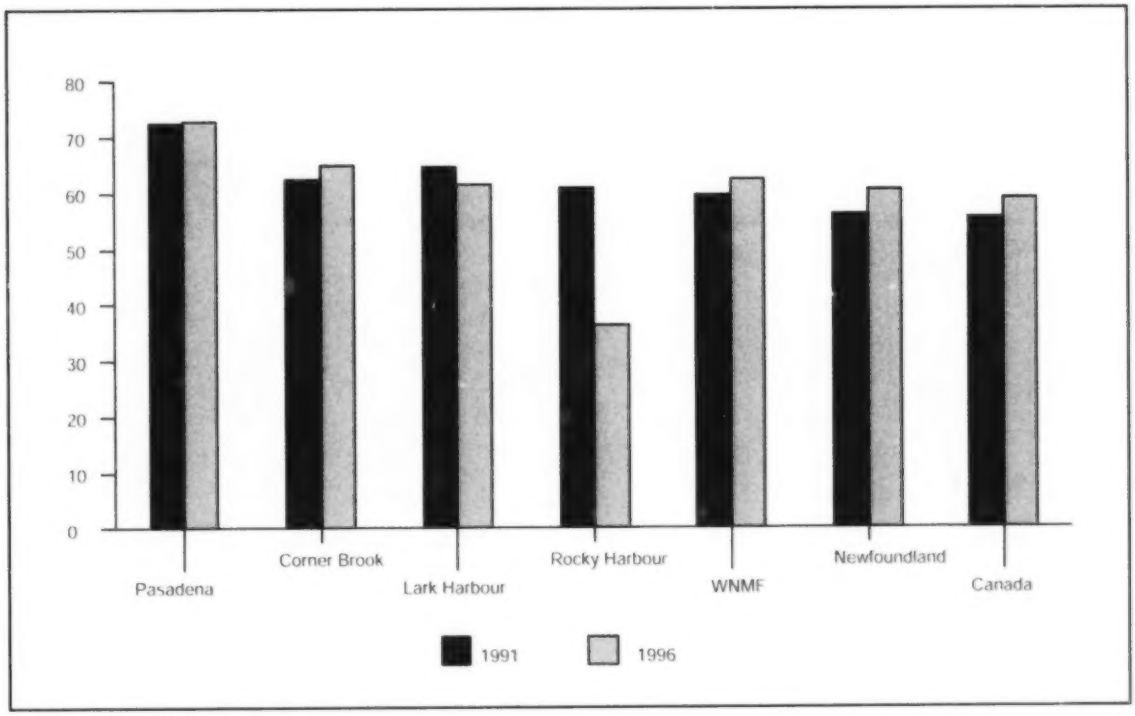


Figure A8. Level of education as a percentage of population 15+, 1996

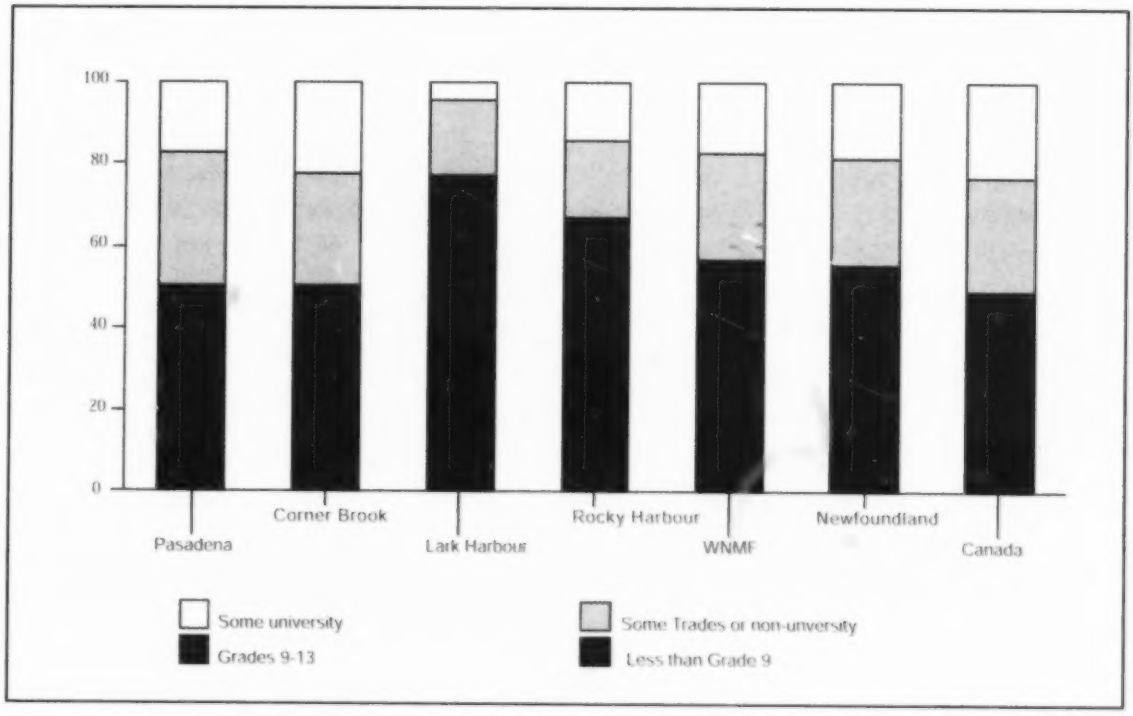
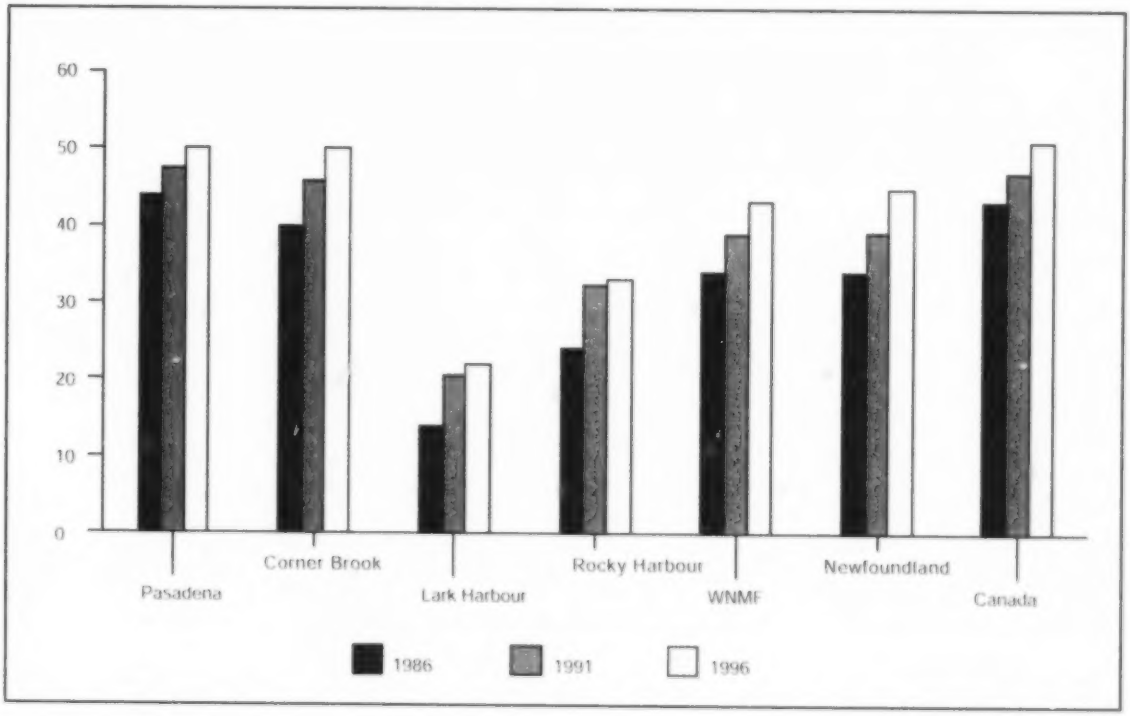


Figure A9. Change in post-secondary educational attainment, 1986–1996



Poverty Measures

Table A20. Incidence of low income by family and individual, 1986–1996

Census Division	Incidence of low income (proportion of population)					
	1996		1991		1986	
	economic families	unattached individuals	economic families	unattached individuals	economic families	unattached individuals
Pasadena	15.0	57.1	14.1	42.0	10.4	31.1
Corner Brook	18.1	42.4	15.2	38.1	16.8	44.9
Lark Harbour	29.8	52.7	17.0	37.0	37.3	0
Rocky Harbour	25.4	20.3	12.0	46.6	18.4	65.4
WNMF	20.0	44.0	15.0	42.0	21.0	45.0
Newfoundland	19.9	42.7	15.8	44.5	21.5	45.0
Canada	16.3	42.2	13.2	36.5	14.3	38.0

Figure A10. Incidence of low income by family and individual, 1996

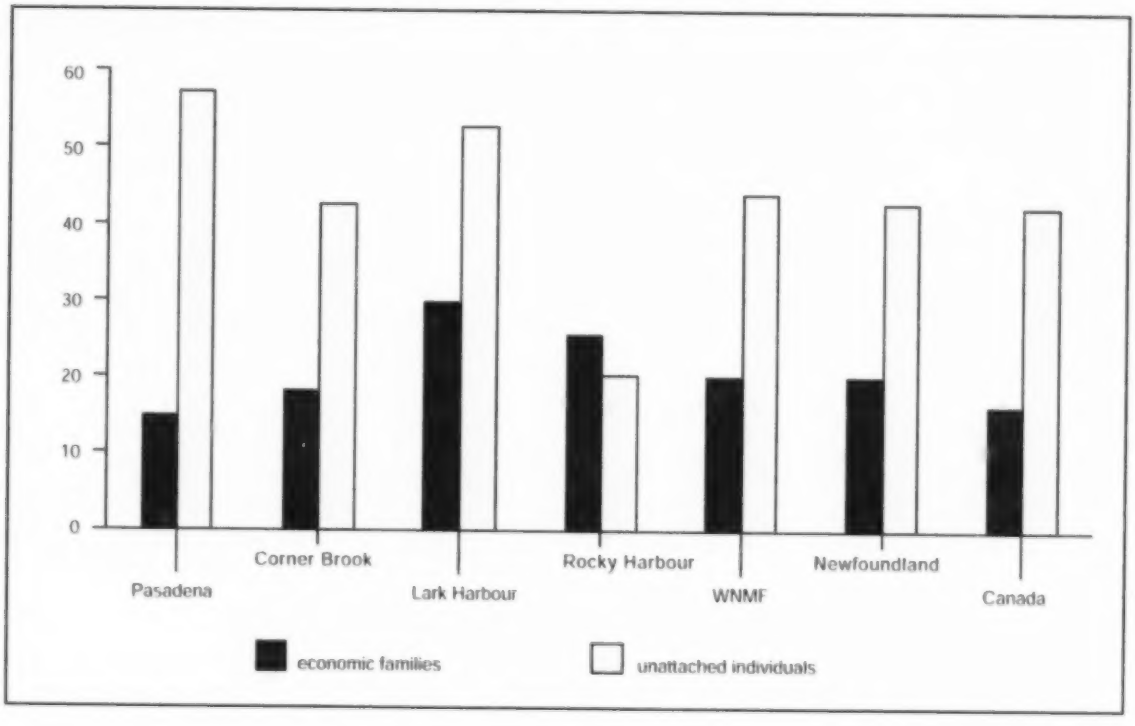
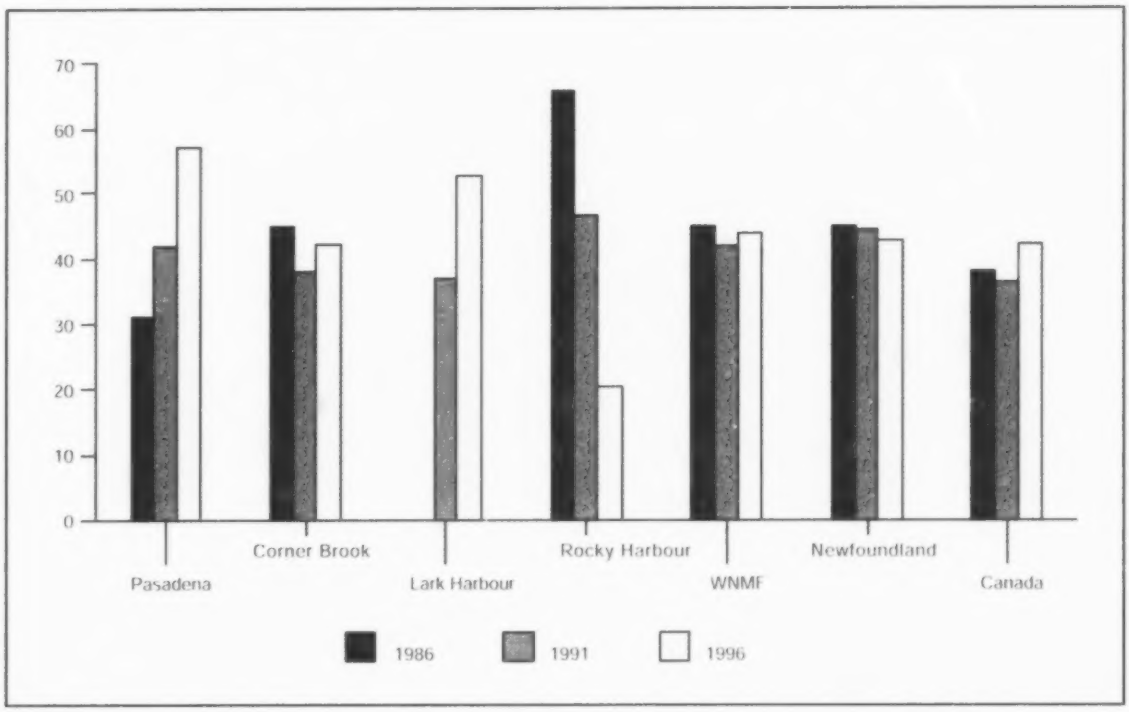


Figure A11. Incidence of low income for unattached individuals, 1986–1996



Real Estate Measures

Table A21. Average dwelling value and payments, 1986–1996 (adjusted to 1996 dollars)

	Average value of dwelling			Average monthly major payments			Average monthly gross rent		
Census Division	**1996**	**1991**	**1986**	**1996**	**1991**	**1986**	**1996**	**1991**	**1986**
Pasadena	83,371	80,670	69,805	584	560	561	471	468	647
Corner Brook	90,348	91,007	73,560	574	615	581	469	458	577
Lark Harbour	41,862	59,124	44,512	255	295	195	267	150	355
Rocky Harbour	56,269	44,477	50,104	237	237	292	411	295	420
WNMF	73,113	73,442	62,005	473	457	440	468	457	528
Newfoundland	70,835	69,448	63,978	469	473	448	497	479	547
Canada	147,877	154,834	114,575	754	759	675	595	622	621

Table A22. Average number of persons per household and percentage of households owned and rented, 1986–1996

Census Division	Average number of persons/HH			Percentage HH owned			Percentage HH rented		
	1986	1991	1996	1986	1991	1996	1986	1991	1996
Pasadena	3.7	3.4	3.1	86.9	83.7	78.4	4.3	15.8	21.6
Corner Brook	3.3	3.0	2.8	71.8	69.6	68.2	28.2	30.4	31.8
Lark Harbour	3.6	3.2	2.8	95.6	93.5	93.9	6.7	8.7	6.1
Rocky Harbour	3.6	3.2	2.8	84.3	87.0	80.0	15.7	15.9	18.7
WNMF	4.0	3.0	3.0	79.6	78.2	75.6	20.4	21.8	24.4
Newfoundland	3.5	3.2	2.9	80.1	78.6	77.1	19.9	21.4	22.8
Canada	2.8	2.7	2.6	62.1	62.6	63.6	37.5	37.1	36.1

Figure A12. Average value of a dwelling, 1986–1996 (adjusted to 1996 dollars)

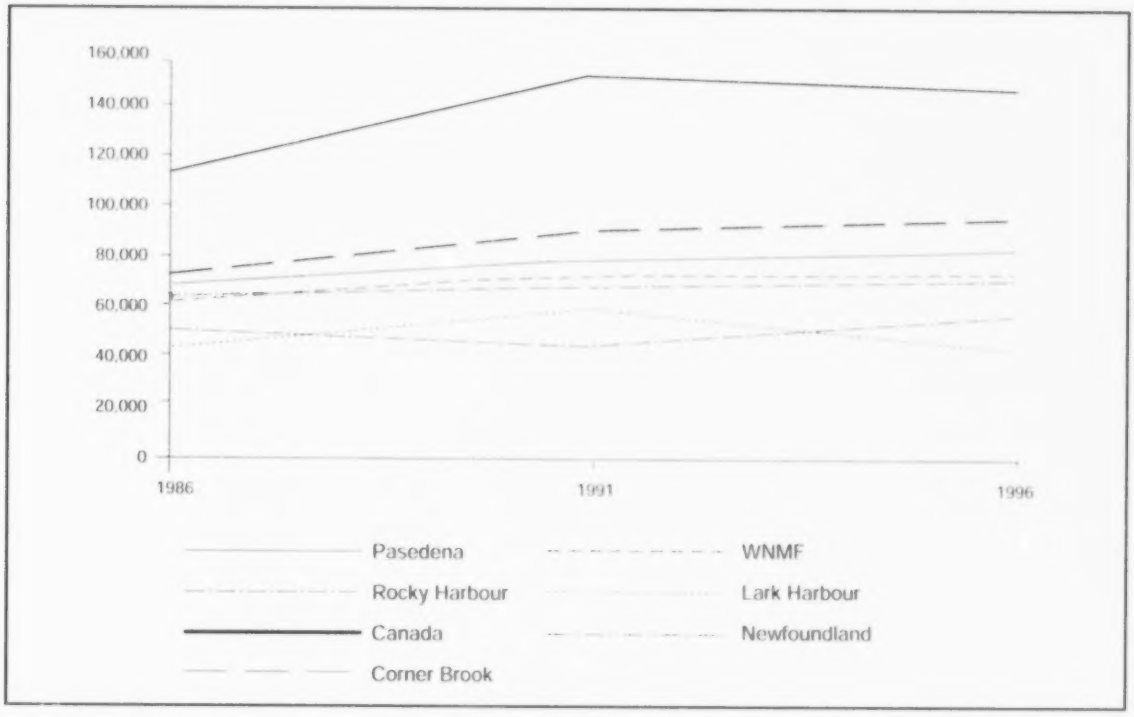


Figure A13. Average gross rent, 1986–1996 (adjusted to 1996 dollars)

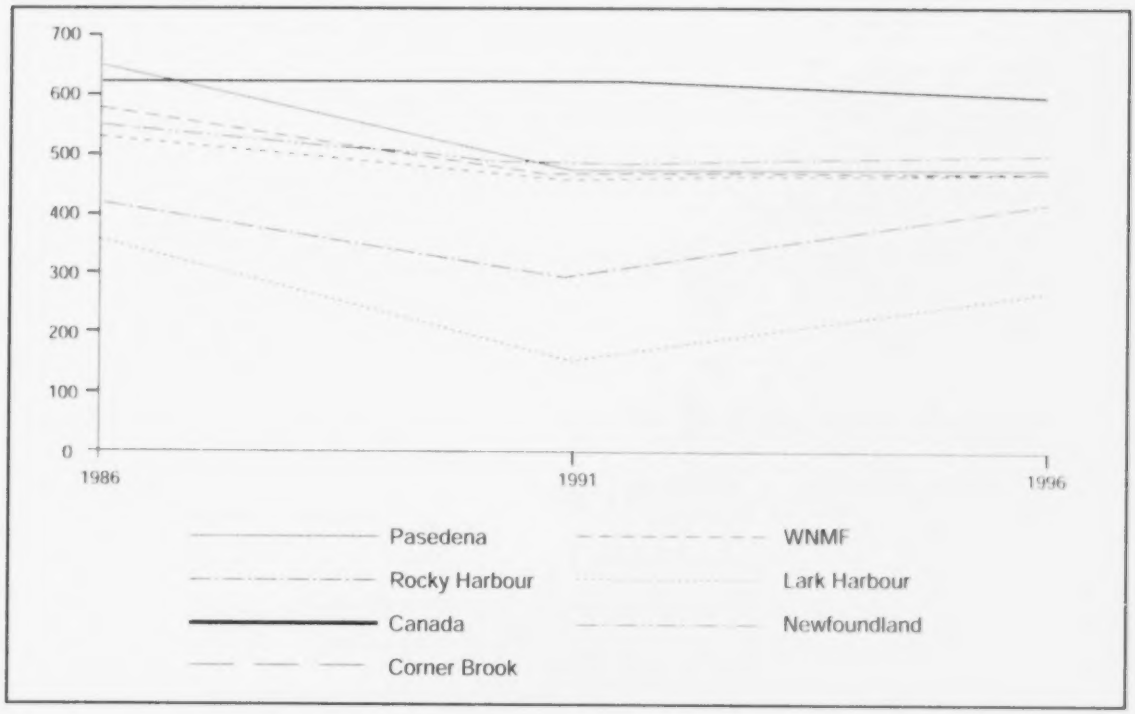


Figure A14. Percentage of owned and rented dwellings, 1996

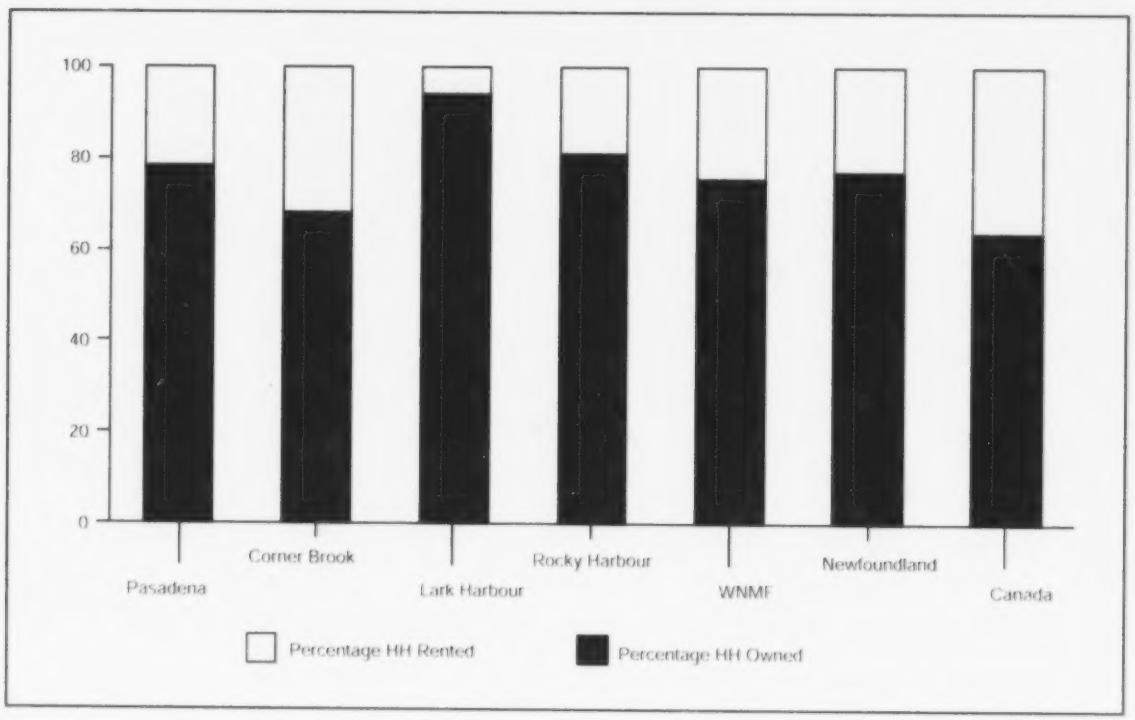
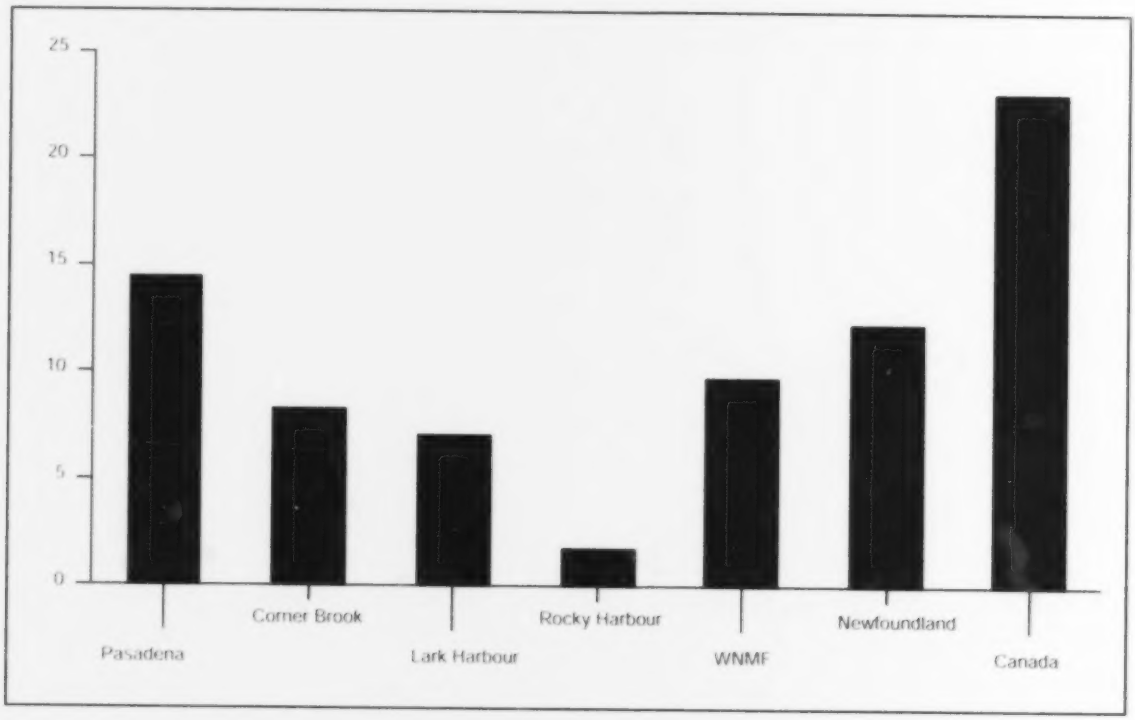


Figure A15. Percent change in owned dwellings, 1986–1996



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